

# **APPENDIX N**

## *Agricultural Analysis*



# AGRICULTURAL ANALYSIS

## Warner Ranch

3810-06-002 (SP), 3800-06-009 (GPA),  
3600-06-011 (R), 3100-5508 (TM), 3500-11-007 (S),  
3000-06-040 (AD), 3910-0602020 (ER)

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August 27, 2015

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## **GLOSSARY OF TERMS AND ACRONYMS**

CEQA	California Environmental Quality Act
CWA	San Diego County Water Authority
FMMP	Farmlands Mapping and Monitoring Program
Guidelines	This refers to the County of San Diego Guidelines for Determining Significance and Report Format Content Requirements, Agricultural Resources.
LARA Model	Local Agricultural Resource Assessment Model
Principal Farmlands	Important Farmlands with the categories of prime, Statewide Importance, or Unique as found on the Important Farmlands Map as a part of the Farmlands Mapping and Monitoring Program of the California Department of Conservation.
PVCSD	Pauma Valley Community Services District
ZOI	Zone of Influence boundary as described in the LARA Model
SANDAG	San Diego Association of Governments
SSA	Special Study Area
TDS	Total Dissolved Solids
RL	Rural Lands
SR	Semi-Rural Lands
VR	Village Residential

## **SUMMARY (ABSTRACT)**

This project is located in the Pauma Valley Area of Northern San Diego County, approximately one mile west of the intersection of SR 76 and the Pala-Temecula Road (S16). It is in the unincorporated area of San Diego County just north of the Pala Resort and Casino. It involves a General Plan Amendment, Specific Plan, and Rezone, Vesting Tentative Map, and Major Use Permit. The project proposes 780 residential units consisting of 534 single family detached and 246 multi-family and attached townhomes on 513.49 acres. Proposed preserved open space would total 358.77 acres. The single family residential parcels would have a minimum parcel size of 3,000 square feet and the project will have a density of one dwelling unit per 0.66 acre.

About 10 percent of the site is presently used for agriculture, which consists of avocados and citrus in the southwestern portion of the property. The nearest offsite agricultural operations are to the south across SR76, to the east in the northern portion of the Pala Reservation, and another area of avocados to the north.

This property has been determined by the San Diego County Department of Planning & Development Services' (PDS) LARA Model to not be an important agricultural resource. This factor, in conjunction with the distances and type of separation and the nearest agricultural uses, has led to the conclusion that there will not be impacts to onsite agricultural uses and that impacts to offsite agricultural resources would be less than significant as a result of this project.

Since there are either no impacts or impacts are less than significant, no mitigation measures are proposed.

## **1.0 INTRODUCTION**

### **1.1 Purpose of the Report**

The purpose of this report is to determine the importance of on-site agricultural resources and assess the potential impacts to those resources, as well as to determine any significant impacts to off site agricultural resources.

### **1.2 Project Location and Description**

This project is located in the Pauma Valley Area of Northern San Diego County, approximately 1 mile west of the intersection of SR 76 and the Pala-Temecula Road (S16) (See Figure 1). It is in the unincorporated area of San Diego County north and just north and west of the Pala Resort and Casino (See Figure 2). Pala Creek runs to the east and the San Luis Rey River runs to the south roughly 1700 feet from the nearest point of the property. The property is comprised of 7 Assessor's Parcels.

The project involves a General Plan Amendment, Specific Plan, Rezone, Vesting Tentative Map, and Major Use Permit for a Small Wastewater Treatment Plant. It proposes 780 residential units consisting of 534 single family detached and 246 multi-family and attached townhomes on 513.49 acres. Proposed preserved open space would total 358.77 acres. The single family residential parcels would have a minimum parcel size of 3,000 square feet and the project will have a density of one dwelling unit per 0.66 acre. (See Figure 3, Land Plan)

The project would be accessed by a central entry road that would be constructed north of SR 76, with a traffic signal installed at the intersection, as well as signalized improvements to the existing SR 76 and Cole Grade Road intersection. The project would also make frontage improvements to the existing 120-foot wide SR 76 easement. These improvements would include widening the existing 24-foot wide pavement to 52 feet, two 12 foot wide drive lanes, a 12-foot wide painted center median, and 8-foot wide shoulders that also include a painted bike lane in each direction. Additionally, a 350-foot long and 12-foot wide acceleration/deceleration lane is proposed adjacent to the project's main entry.

It is anticipated that earthwork quantities for on-site development will consist of 2.3 million cubic yards of cut and 2.3 million cubic yards of fill material.

In addition to the 358.77 acres of preserved open space, there will be 7.69 acres of community parks, 14.63 acres of landscaped areas, and a 4.23 acre active public recreational park. Finally, a 10,000 square foot Fire Station will be constructed.

In terms of water service, 80 acres of the property is currently within the Rainbow Municipal Water District and the County Water Authority, but no water lines or

meters exist to serve this part of the property. There will be a pump station constructed along the southwestern boundary of the site with a 6-inch sewer force main running to the west within the right-of-way for SR 76, ultimately connecting to another new pump station to be provided by the Rainbow Municipal Water District.

There will also be a natural gas line located in the Highway 76 Right-of-Way to serve this property.

There is currently a residence and numerous agricultural and utility buildings located in the southwest portion of the property.

### **1.3 Analysis Methods**

#### **1.3.1 Study Area**

The study area includes the subject property to be developed, as well as all parcels within 1,320 feet of the smallest rectangle encompassing the entire subject property (See Figure 4). The subject property comprises 513.49 acres of this area, while the remainder constitutes 2,366 acres for a total of 2,880 acres.

The study area has been prepared in accordance with the guidelines for the ZOI boundary for the LARA Model.

Method:

Agricultural uses and other land uses were determined through a combination of several sources. The primary source was a digitized aerial photo taken in 2009. This photo was enlarged so that agricultural areas as well as the types of agriculture could be identified. This was supplemented by discussions with the project manager. Please note that the measurements taken from the aerial photo are two-dimensional and do not account for topography. Therefore there may be slight deviations in some of the acreage figures in rough terrain. However, this method was deemed sufficiently accurate for the broad conclusions desired in this analysis.

Agricultural areas Impacted were determined by superimposing the areas in agricultural use over the Tentative Map and using a digital planimeter to measure pads, driveways, and streets. Cuts and fills for streets and pads and trails were also included in these measurements.

Soils information was determined through the San Diego County Important Farmland Map, produced by the California Department of Conservation, and the Soil Survey for the San Diego Area produced by the U.S. Department of Agriculture Soil Conservation Service.

Climatic Data was determined through use of the University of California Extension Service publication entitled Climates of San Diego County, Agricultural Relationships, as well as through use of the information provided in the above mentioned Soils Survey and the Phase 1 Environmental Report done on this property.

Aerial photos of 1946, 1953, 1964, 1981, 1989, 2003, and 2005 were used, as well as information from the Ranch Manager to determine the historical status of agriculture on the property.

For a full listing of sources, please see "References" near the end of this report.

## **1.4 Environmental Setting (Existing Conditions)**

### **1.4.1 Regional Context**

An area was chosen that would function as the regional context, as well as the cumulative study area. The boundaries of this area were established by reviewing features of the landscape, which may isolate agricultural in this vicinity from other agricultural areas in the County. These landscape features were primarily major areas of steep slope that would separate agricultural areas, major areas where no agricultural activity was taking place, and areas that had had substantial urban development.

The Regional Setting encompasses much of the valley and slope areas of the San Luis Rey River Valley. It is some 11,745 acres in size and is shown on Figure 5 in terms of topography. This area is generally level within a valley created by the San Luis Rey River and some tributaries, with the exception of some of the fringe areas to the north and south.

The regional context area is within the Pala-Pauma Community Planning Area. A considerable amount of the area is in Indian Reservations. Outside of the reservations, the County General Plan shows regional categories of Rural and Semi-Rural over a large majority of the area. There is a combination of various General Plan Designations including the RL-40, RL-20, SR-10 in the Rural and Semi-Rural areas. Finally, there are Village designations in the Pauma Village (VR-2.9 and VR-4.3).

About 39.5 percent of the cumulative study area is used for agriculture, or roughly 4,635.59 acres. There are also large areas scattered throughout the cumulative study area that are vacant. Agriculture in this area is primarily citrus, with small areas of intensive truck farming, nursery stock, avocados and livestock grazing. The remainder of the area is consists of estate homes, the San Luis Rey Country Club Golf Course, or vacant land.

Climate in this region is similar to the inland San Diego County with slightly more rainfall and more extremes in climate than the coastal area. However, the climate is still very mild and the mild nature is an important factor for the agriculture that exists in this study area.

About 4,435.5 acres, or 37.8 percent of the soils in the cumulative study area are classified as principal farmlands (See Figure 6). Generally the quality of soils in this area vary from fair to good, with the better soils found in the Eastern San Luis Rey Valley. As indicated in the previous paragraph, climate plays a more important role in the agricultural development of this area than the soils.

Water supply within this area is complex. Water is provided through the use of individual wells and through the Rancho Pauma Mutual Water Company, the Yuima Municipal Water District, the Mootamai Municipal Water District, and the Valley Center Municipal Water District. Additionally there are parts to the south near Valley Center Road where there is no water district. Finally small parts in the northwestern and southwestern portions of the Cumulative Area are within the Rainbow Municipal Water District.

The central portion of Pauma Valley, including the subject property, is serviced by the Rancho Pauma Mutual Water Company. This District is not a member of the County Water Authority and does not have access to imported water, providing water to its members from wells. There is an agreement with the Yuima Municipal Water District that that District's imported water may be used in times of need, such as fires, as a backup supply.

The Yuima Municipal Water District services much of the area outside of the central area and is a member of the County Water Authority. The Mootamai Municipal Water District services a small area in the northern part of this region. Administrative functions of this Water District are handled by the Yuima Municipal Water District, but water is provided to members from wells, and this district is not a member of the County Water Authority.

The Valley Center Municipal Water District Serves only a very small part of the regional area to the southwest, and the Rainbow Municipal Water District serves a small area to the west. Finally, there are areas to the southeast along Valley Center Road and in the central and northern areas that are not in a water district.

Within the study area as determined by the LARA Model, there are 167.8 acres in agriculture of which 35 acres are in avocados, 40 acres in nurseries, 90 acres used for grazing, and 2.7 acres in citrus.

#### **1.4.2 On-site Agricultural Resources**

The property has been historically a horse & cattle ranch used for horsekeeping and animal raising, since at least 1928. In addition there some orange and avocado orchards that were added incrementally over the years, although this use remains secondary to the animal raising.

Presently there are 51 acres of productive agriculture on the site, which is located in the southwestern and central western area of the property. The FMMP designates the agricultural areas as either Prime Farmlands or Unique Farmlands, with 76.9 percent of the property is classified as Farmlands of Local Importance or Other Land. There are 5 soils types occupying 105 acre or 20.5 percent of the property which are candidates for listing as prime soils or soils of statewide importance. Soils are further described in the next paragraph. Figure 7 indicates those agricultural resources found on site.

## **Soils**

The U.S. Department of Agriculture, Soil Conservation Service has prepared a Soil Survey for San Diego County. According to this survey there are 8 major soil types making up approximately 98 percent of all the soil formations within the subject property, and they are described below. There are also 5 soil types occupying very small amounts of acreage within the subject property that have not been discussed.

**CnG2:** Located mostly in the northern portion of the subject property, this Cieneba-Fallbrook Rocky Sandy Loam occupies approximately 177 acres or 34 percent of the subject property. This soil formation is found on 30 to 65 percent slopes, is low to medium in fertility, with rapid to very rapid runoff, and a high to very high erosion hazard. According to the survey, this soil is used for avocados, wildlife habitat, recreational areas, and watershed. The Capability Rating is Viie-7 (19) for Loamy range site and VIIIs-1 (19) for Rock outcrop.

**CIG2:** Located in the eastern portion of the study area, this Cieneba Sandy Loam soil is found eroded on 30 to 65 percent slopes. It occupies approximately 95 acres or 18 percent of the subject property. This soil is steep to very steep. The runoff is rapid to very rapid, and the erosion hazard is high to very high. The Survey reports that this soil is used mainly for range, wildlife habitat, and watershed—with small areas used for avocados. The Capability Rating for this soil is VIIe-1 (19); Shallow Loamy range site.

**LrG:** Located in the western portion of the subject property, this Las Posas Stony Fine Sandy Loam soil is found on 30 to 65 percent slopes. It occupies approximately 78 acres or 15 percent of the subject property. This soil is steep to very steep, has medium

fertility, runoff is rapid to very rapid, and the erosion hazard is high to very high. According to the survey this Las Posas soil is used for range, and watershed. The Capability Rating for this soil is Vlle-7 (19, 20); Shallow Loamy range site.

**VaA:** Located in the southern portion of the subject property, this Visalia Sandy Loam occupies approximately 57 acres or 11 percent of the subject property. This nearly level soil has high fertility, slow runoff, and the erosion hazard is slight. According to the survey, this soil is used for tomatoes, truck crops, avocados, citrus, flowers, small grain, and nursery stock. The Capability Rating is I-1 (19).

**LrE:** Located in the western and southern portions of the subject property, this Las Posas Stony Fine Sandy Loam soil is found on 9 to 30 percent slopes. It occupies approximately 47 acres or 9 percent of the subject property. This soil is strongly sloping to moderately steep, has medium fertility, runoff is medium to rapid, and the erosion hazard is moderate to high. According to the survey this Las Posas soil is used for range and watershed. The Capability Rating for this soil is Vle-7 (19, 20); Loamy range site.

**RaB:** Located in the south-central portion of the subject property, this Ramona Sandy Loam soil is found on 2 to 5 percent slopes. It occupies approximately 25 acres, or 5 percent of the subject property. This gently sloping soil has medium fertility, the runoff is slow, and the erosion hazard is slight. The Survey reports that this soil is used for citrus, truck crops, tomatoes, flowers, and housing developments. The Capability Rating for this soil is lle-1 (19).

**RaC2:** Located in the south and eastern portions of the subject property, this Ramona Sandy Loam soil is found on 5 to 9 percent slopes. It occupies approximately 18 acres, or 18 percent of the subject property. This moderately sloping soil has medium fertility, the runoff is slow to medium, and the erosion hazard is slight to moderate. The Survey reports that this soil is used for citrus, truck crops, tomatoes, flowers, range and dry farmed crops. The Capability Rating for this soil is lle-1 (19); Loamy range site.

**RcE:** Located in the south-central portion of the subject property, this Ramona Gravelly Sandy Loam soil is found on 9 to 15 percent slopes. It occupies approximately 8 acres, or 8 percent of the subject property. This moderately steep soil has medium fertility, the runoff is medium to rapid, and the erosion hazard is moderate to high. The Survey reports that this soil is used for citrus and range. The Capability Rating for this soil is Vle-1 (19); Loamy range site.

Figure 8 shows the boundaries of soil types found on the property.

Thus one of the soils, occupying 57.01 acres or 11 percent of the property is rated as high in fertility. Four other soils are rated medium in fertility, one low to medium, and one not suitable for agriculture. Thus soils found on-site would be slightly lower than medium in fertility.

### **FMMP Designations**

The California Department of conservation has classified land in California into seven "Important Farmlands Categories." Annotated definitions of the relevant classifications are found below.

**Prime Farmland:** Land with the best combination of physical and chemical characteristics 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.

**Urban and Built-up Land:** Residential land with a density of at least six units per ten-acre parcel, as well as land used for industrial and commercial purposes, golf courses, landfills, airports, sewage treatment, and water control structures.

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

There are also Categories of Grazing Land, Other Land, and Water that have not been defined.

Figure 9 indicates that 4 Important Farmland Categories are found on the subject property. Dark Green represents Prime Farmlands, which constitute 74.94 acres or 14.9 percent of the subject property. Unique Farmlands are shown in yellow and constitute 45.39 acres or 8.49 percent of the subject property. White represents Farmlands of Local Importance and constitutes 173.48 or 33.78

percent of the subject property. Grey represents Other Lands and constitutes 221.6 acres or 43.15 percent of the subject property.

### **History of Agricultural Use**

The property has been historically a horse & cattle ranch used for horsekeeping and animal raising since at least 1928. In addition there are some orange and avocado orchards that were added incrementally over the years, although this use remains secondary to the animal raising. Both the animal and orchard operations have been losing money for at least the last 10 years.

### **Climate**

Information for Micro Climates in San Diego County is contained in the Climates of San Diego County Agricultural Relationships, published by the University of California Agricultural Extension Service. At the time of the publication of this document, the nearest Weather Reporting Station to the Subject Property was Valley Center 3N.

While the closest Weather Station to the subject Property is the Valley Center 3N station, a complete record is not available for this Station. The next closest Weather Station is the Escondido Weather Station. Information not available for the Valley Center Station will be supplemented by the information provided by the Escondido station.

The Escondido Weather Station indicates an annual average maximum mean temperature of 76.2 degrees with an extreme high of 108 degrees and an extreme low of 17 degrees. The Valley Center Station reports an average rainfall of 16.09 inches with 11.47 inches coming during the months of December, January, February and March. The estimated date of the first freeze from the Valley Center Weather Station was December 1<sup>st</sup> and the last estimated freeze is April 1<sup>st</sup>.

The subject property is located in the Sunset Climate Zone 21. This is a zone that is good for citrus and gets adequate chilling for some plants. Low temperatures range from 23 to 36 degrees with temperatures rarely dropping far below 30 degrees.

Thus, the mildness of the microclimate of this area would be advantageous to the growing of semi-tropical crops.

### **Water**

Eighty acres of this property are within the Rainbow Municipal Water District and is within the County Water Authority, although no water lines or meter currently

serve the property from this District. The remainder of the property does not have imported water available to it and is served by five wells along SR 76.

### **Williamson Act Contracts and Agricultural Preserves**

The subject property is not and has never been in under a Williamson Act Contract or within an Agricultural Preserve.

#### **1.4.3 Offsite Agricultural Resources**

Offsite resources have been reviewed in terms of the study area previously discussed.

Parts of the Pala Agricultural Preserve (15) are located in the southwestern part of the study area (See Figure 11), and amount to 318.33 acres on 11 parcels. Of the 318.33 acres, 49.47 acres are under a Williamson Act Contract, but a notice of non-renewal was filed on September 24, 2002. Therefore this contract expired on January 1, 2013.

Figure 10 shows FMMP Designations for the Study Area. Twenty-seven hundredths of a percent of the study area is in Prime Farmland, 3.42 percent is in Farmlands of Statewide Importance, while 2.44 percent are in Unique Farmlands and 14.02 percent are in Farmlands of Local Importance. Urban and Built-Up Lands respectively comprise 5.26 percent and Other Lands comprise 74.59 percent.

Thus 79.85 percent of the Study Area is in a FMMP Designation, which is not considered agricultural land.

In terms of agricultural operations, there are 167.8 acres of the study area in agriculture, or 7.1 percent. Of the 167.8 acres, 54.29 acres are used for grazing, 39.5 acres are used for nursery, 34.95 for avocados, 36.38 acres for dry farming, and 2.7 acres for citrus. The grazing is found to the south on the Williamson Act Contract lands, while the dry farming is on the Pala Indian Reservation, with the dry farming areas all having residences adjacent to them. The nursery operations are found to the southwest on the south side of SR 76, and one area of oranges is found primarily adjacent to the property to the south west and 318 feet from the nearest proposed residence. The smallest distance between a proposed home site and an existing agricultural operation would be the grazing area to the south, which would be 180 feet from the nearest home site. However, there would also be a Major Highway separating the uses at that point. All other agricultural operations would be separated by at least 1800 feet from the nearest residence proposed.

Figure 12 shows agricultural operations within the study area.

#### **1.4.4 Zoning and General Plan Designation**

The site is divided into two zones. One hundred sixty acres of the northwestern portion of the property is zoned A70(4), which is a Light Agricultural Zone with a 4 acre minimum parcel size. The remainder of the property is zoned A72(4), which is the General Agricultural Zone with a minimum parcel size of four acres.

The entire site lies within the Rural Regional Category and has a General Plan Designation of RL-40. It has been described as a Special Study Area (SSA) within the Pala/Pauma Subregional Plan.

A General Plan Amendment has been submitted as a part of the project and is explained in the Project Description in the first Section of this Analysis.

## **2.0 ONSITE AGRICULTURAL RESOURCES**

### **2.1 Local Agricultural Resources Assessment (LARA) Model**

#### **2.11 LARA Model Factors**

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 Local Agricultural Resource Assessment (LARA) Model. The LARA Model takes into account six factors including water, climate, soil quality, surrounding land uses, land use consistency, and slope in determining the importance of agricultural resources.

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 (Section 3.1 LARA Model Instructions, from the Agricultural Guidelines for Determining Significance). The factor ratings for the project site are summarized in Table 2, LARA Model Interpretation of LARA Model Results.

#### **Water**

The water rating for this project is "low". Eighty acres of the 513.49-acre site is located within the Rainbow Municipal Water District however, the nearest water line is to the north on Jeremy Way, some 1,600 feet north of this property, and there is no meter on the property. The property is divided between aquifer types. About 30 percent of the site is an alluvial aquifer type, and 60 percent of the site

is located in a Fractured Crystalline Rock aquifer type. In this situation, the LARA Model indicates that the property should be classified as the aquifer that will provide the most water. In this case, that would be the alluvial aquifer, which would result in a rating for the water factor of "Moderate." However, laboratory tests on water samples taken from four of the five wells indicate the presence of Total Dissolved Solids (TDS) between 610 to 1,500 mg/L with an average of 957.5 mg/L. The laboratory reports are provided in Appendix D.

A sample was not taken from one of the wells because that well has recently had a new pump installed. The performance test for the new pump has not been done and the owners did not want the pump run prior to the performance test. The well is in close proximity to the other wells so it is very likely that the results would be similar to the other four wells.

Table 4 of the Guidelines for the LARA Model indicate that if the site has groundwater with TDS levels above 600 mg/L the water rating may be reduced by one level, thus the Water Rating would become "Low".

### **Climate**

The climate rating for this project is "high". It is located within Sunset Climate Zone 21. According to the Guidelines, property within this zone would be rated as "high".

### **Soil Quality**

The soil quality rating for this project is "Moderate". A Matrix Rating of 0.26 would equate to a Low rating, but since there are more than 10 acres of contiguous Prime Farmland and Farmland of Statewide Importance, the soils rating for this project would be "Moderate".

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**Table 1****Soil Quality  
Matrix**

A	B	C	D	E	F	G
Soil Type	Acreage of Soil Type	Unavailable for Agricultural Use	Available for Agricultural Use	Proportion of Project Site	Candidate for Prime or SW	E X F
CnG2	176.55	0.59	175.96	45.22%	0	0
CIG2	94.98	0.75	94.23	24.22%	0	0
LrE	46.69	0.21	46.48	11.94%	0	0
LrG	78.48	0	78.48	20.17%	0	0
VaA	57.01	2.68	54.33	13.96%	1	0.139623
RaB	25.03	1.36	23.67	6.08%	1	0.06083
RaC2	17.91	0.37	17.54	4.51%	1	0.045076
RcE	7.88	4.17	3.71	0.95%	0	0
VbB	4.31	0.07	4.24	1.09%	1	0.010896
CmrG	1.22	0	1.22	0.31%	0	0
FaE3	1.69	0	1.69	0.43%	0	0
Rm	0.84	0	0.84	0.22%	0	0
VaB	1.03	0.04	0.99	0.25%	1	0.002544
Total	513.62	Total	503.38			
Matrix Score						0.258969

The end numbers are based upon the areas available for Agricultural Use as described in the Guidelines.

See Figure 13, Areas Available for Agricultural Use.

**Surrounding Land Use**

It was determined that of the 2,366 acres of the ZOI, 2,145.9 acres or 90 percent of this area was considered compatible with agriculture. Therefore according to the Guidelines, this project would have a rating of "high".

**Land Use Consistency**

The median parcel size of the 600 residential parcels of this project is 0.11 acre. The median parcel size of the 124 parcels within the ZOI is 4.29. Therefore the median parcel size proposed for the project is less than the median parcel size within the ZO, and according to the Guidelines, this project would have a rating of "high".

## Slope

The average slope for this property in terms of Land Available for Agriculture is 56 percent. Therefore, according to the Guidelines, it would have a rating of "high".

There are extensive areas of steep slope in the northern portion of this property that will not be developed. However, this area is still considered available for agriculture, since it does not meet the criteria established in the Guidelines in determining those areas not available for agriculture.

### 2.1.2 LARA Model Results

In terms of Required Factors, this site was rated as low for Water, high for Climate, and moderate for Soils. In terms of Complementary Factors, it was rated high for Surrounding Land Use, and Land Use Consistency and low for Topography.

Table 2 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		

Since one of the Required Factors is rated as low, the interpretation of the LARA Model Scenario Five is that the site is not an important agricultural resource.

## **2.2 Guidelines for the Determination of Significance**

“The following significance guideline is the basis for determining the significance of impacts to important onsite agricultural resources, as defined by the LARA Model, in San Diego County. 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 Project Results**

The LARA Model has determined that this site is not an important resource.

## **2.4 Mitigation Measures and Design Considerations**

Since the LARA Model has determined that this site is not an important agricultural resource, there will be no impacts to agricultural resources on-site and no mitigation measures or design considerations have been proposed.

## **2.5 Conclusions**

Since the LARA Model has determined that this site is not an important resource, there will be no impacts to important agricultural resources on site.

## **3.0 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 and Williamson Act Contract land in San Diego County:

- a. The project proposed 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 offsite agricultural resource to a non-agricultural use or could adversely impact the viability of agriculture on land under a Contract.

### **3.2 Analysis of Project Effects**

- a. The project would propose a non-agricultural use near an active agricultural operation and property under a Williamson Act Contract, but will not result in conflicts that are likely to occur and could result in the conversion of agricultural resources to a non-agricultural use for the following reasons.
  - 1. The areas under a Williamson Contract filed for a non-renewal and the contract was terminated on January 1, 2013. Additionally, the uses on the property are grazing and would be of a low intensity and not likely to conflict with a residential area.
  - 2. There is a considerable separation between the residential uses proposed and the agricultural uses within the ZOI. The grazing areas formerly under contract are nearest. The smallest distance between a proposed home site and an existing agricultural operation would be the grazing area to the south and the citrus area to the west. The citrus area to the west would be 318 feet from the nearest proposed residence, while the grazing area would be 180 feet from the nearest home site. However, there would also be a Major Highway separating the uses at that point. This property fronts on a state highway (SR76) which leads, within 6 miles, to Interstate 15, and is a Community Collector (with improvement options) on the Mobility Element. This road will have an ultimate right of way of 84 to 96 feet and as of 2010, had 11,200 average daily trips per day, and is projected by SANDAG to carry 22,500 average daily trips by the year 2035.

All other agricultural operations would be separated by at least 1,800 feet from the nearest proposed residence.
  - 3. The dry farming parcel within the Pala Reservation is, at the nearest point, located 1,800 feet from the nearest proposed residential unit of the

Project. In addition, this parcel, as well as each of the other parcels identified as dry farming are adjacent to existing single-family dwellings within the Pala Reservation. Finally, there is a recent residential development on the reservation approximately 300 feet to the west of the nearest dry farm area and between the dry farm area and the project. Thus these dry farm parcels have not been affected in their use by adjacent residences, and there is a recent plan for additional residences between the Project and most of the dry farming. If the dry farming areas have not been impacted by the contiguous and nearby residences, it is unlikely they will be impacted by residences 1,800 feet distant. (See Figure 12)

4. The San Diego County Board of Supervisors, on February 12, 2003, amended the San Diego County Code of Regulatory Ordinances to add the County Agricultural Enterprises and Consumer Information Ordinance (similar to State's Right-to-Farm Act), which requires home purchasers to be notified in writing that agricultural uses may exist near to property that the buyer is purchasing. The buyer must acknowledge by signature that such agricultural uses are likely to be nearby that may expose the buyer to certain irritations and inconveniences. Thus anyone purchasing a parcel of this development must be notified of the near agricultural uses and the potential for irritations and inconveniences.

- b. The project does not propose a school, church, day care or other use that involves a concentration of people at certain times.
- c. The project would not involve other changes to the existing environment, which due to their location or nature, could result in the conversion of off-site agricultural resource. This is currently vacant land or agriculture which will be changed to single family residences. The possibility of conflicts between these residences and the agriculture in the vicinity has previously been discussed. Also as previously discussed, the Williamson Act Contract in effect on the land to the south terminated on January 1, 2013.

Based upon the above information, potential agricultural impacts from land use conflicts would be less than significant.

### **3.3 Mitigation Design Considerations**

It has been determined that mitigation will not be necessary. This is due to the distances between the proposed residential uses and existing agricultural operations (1800 feet from the residential uses to the agricultural uses on the east and 318 feet to the agricultural uses on the west), the separation between these uses by SR 76 to the south, and that the nearest agricultural uses (to the east) are presently in the midst of the Pala Reservation. Finally there is the

requirement that purchasers of residential uses in agricultural areas be notified of the potential for irritations and inconvenience.

### **3.4            Conclusions**

In accordance with the stated significance guidelines it has been determined that the project as proposed will have a "less than significant effect" on agricultural resources.

## **4.0            CONFORMANCE WITH AGRICULTURAL POLICIES**

### **4.1            County**

General Plan conformance will be addressed in the CEQA analysis of Land Use and Planning.

### **4.2            LAFCO**

**See Appendix C for a discussion of LAFCO issues.**

## **5.0            CUMULATIVE IMPACTS ANALYSIS**

### **5.1            Guidelines for the Determination of Significance**

Section 4.2.4 of the Guidelines indicates in part that

"A project that is determined not to be an important agricultural resource under the LARA Model, 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".

Sections 2.0-2.5 of this Report indicate that this site is not an important agricultural resource based upon the results of the LARA Model. Sections 3.0 to 3.4 address the indirect impacts to agricultural resources and conflicts with agricultural zoning or a Williamson Act Contract and concluded that the project as proposed would not have an indirect impact to onsite important agricultural resources.

Since this site has been determined to not be an important agricultural resource and there would be no significant indirect impacts to agricultural resources or conflicts with agricultural zoning or a Williamson Act contract, under Section 4.2.4 this project would not have the potential to contribute to a cumulative impact.

## **5.2            Analysis of Project Effects**

See Section 5.1 of this report.

## **5.3            Mitigation Measure and Design Considerations**

See Section 5.1 of this report. This project would not have the potential to contribute to a cumulative impact and no mitigation measures or design considerations are proposed.

## **5.4            Conclusions**

For reasons stated in Section 5.1 of this report, the conclusion is that there will not be cumulative impacts to agricultural resources as a result of this project.

## **6.0            SUMMARY OF PROJECT IMPACTS AND MITIGATION**

No impacts have been identified and no mitigation measures are proposed.

## **7.0            REFERENCES**

Written Works:

County of San Diego, Department of Weights and Measures, 2007 Crop Statistics & Annual Report

University of California, Agricultural Extension Service. Climates of San Diego County—Agricultural Relationships, November 1970.

USDA, NASS, California Field Office. 2005 California Citrus Acreage Report.

United States Department of Agriculture, Soil Conservation Service and Forest Service. Soil Survey San Diego Area, California. December 1973

California Department of Conservation, Division of Resource Protection, Farmland Mapping and Monitoring Program. Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance—San Diego County

California Department of Conservation, Division of Resource Protection, Farmland Mapping and Monitoring Program. 2000-2002 Land Use Conversion, Table A-26, San Diego County.

HistoricAerials.com. Aerial Photos from 1946, 1953, 1964, 1981, 1989, 2003, and 2005.

**Maps:**

California Department of Conservation, Division of Resource Protection, Farmland Mapping and Monitoring Program. San Diego County Important Farmland 2004

County of San Diego, Department of Public Works, Mapping Section. Pala Pauma Valley Subregional Plan.

County of San Diego, Department of Public Works, Mapping Section. County of San Diego General Plan—Regional Land Use Element Map,

County of San Diego, Department of Public Works, Mapping Section. County of San Diego—Agricultural Preserves.

Rainbow Municipal Water District, District Boundaries

SanGis, County of San Diego General Plan 2020 Reference Maps for Pauma Valley as Follows:

Parcelization

Vegetation

Topography

Pala Pauma Discretionary Project Status, September 2008

## **8.0 LIST OF PREPARERS AND PERSONS AND ORGANIZATION CONTACTED**

James Chagala—Principal Author. Placed on the San Diego County Environmental Consultant List in the field of Agriculture on November 14, 2001. Recertified on this Consultant List in Spring of 2007.

Jerry Chagala—Planning Technician

Eric Chagala—Planning Technician

Erik Zetmeir—Planning Technician

Monica Adams—EIR Preparer

Carey Fernandes--EIR Preparer

## **TECHNICAL APPENDICES / ATTACHMENTS**

## **Appendix A**

### **Figures**

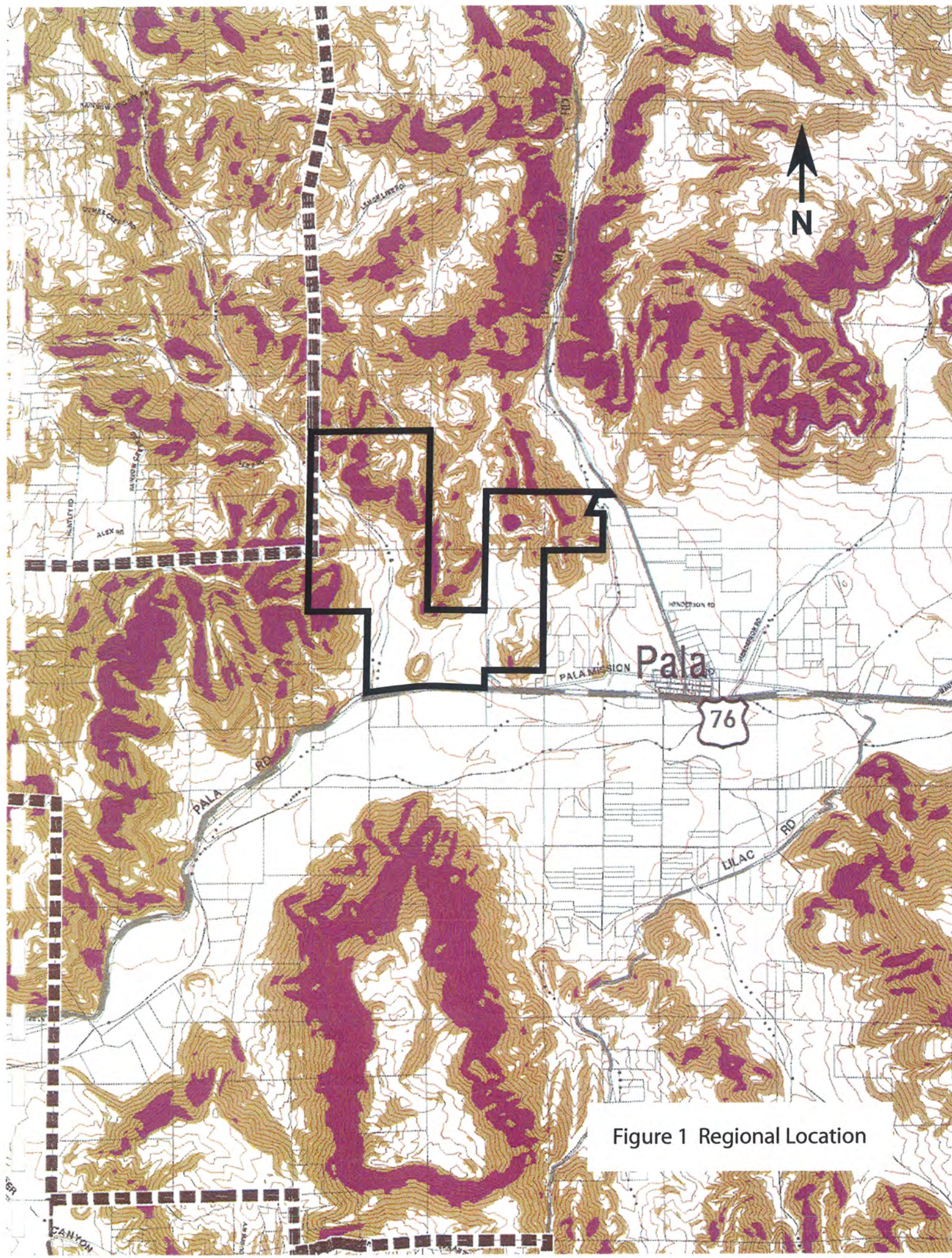


Figure 1 Regional Location

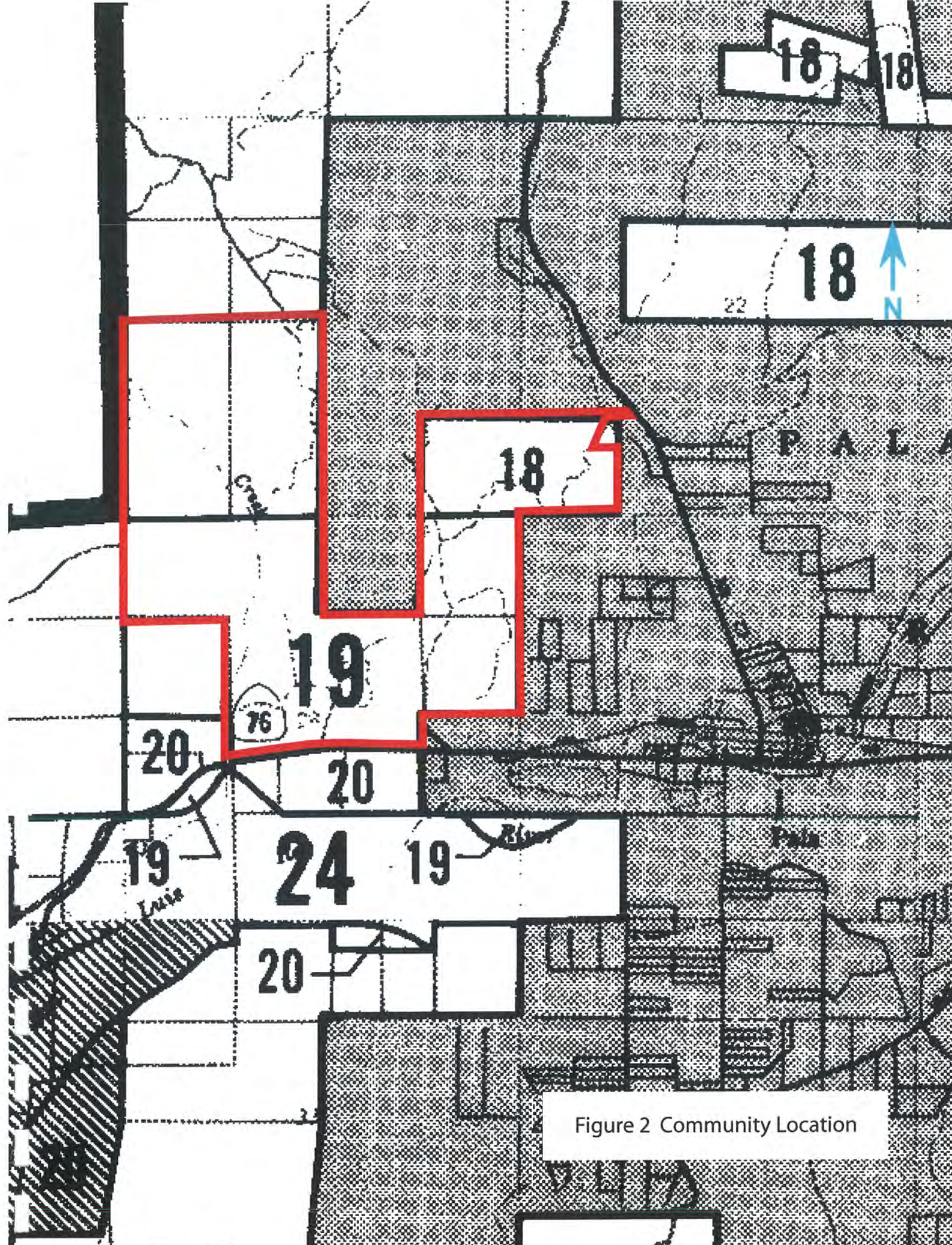


Figure 2 Community Location

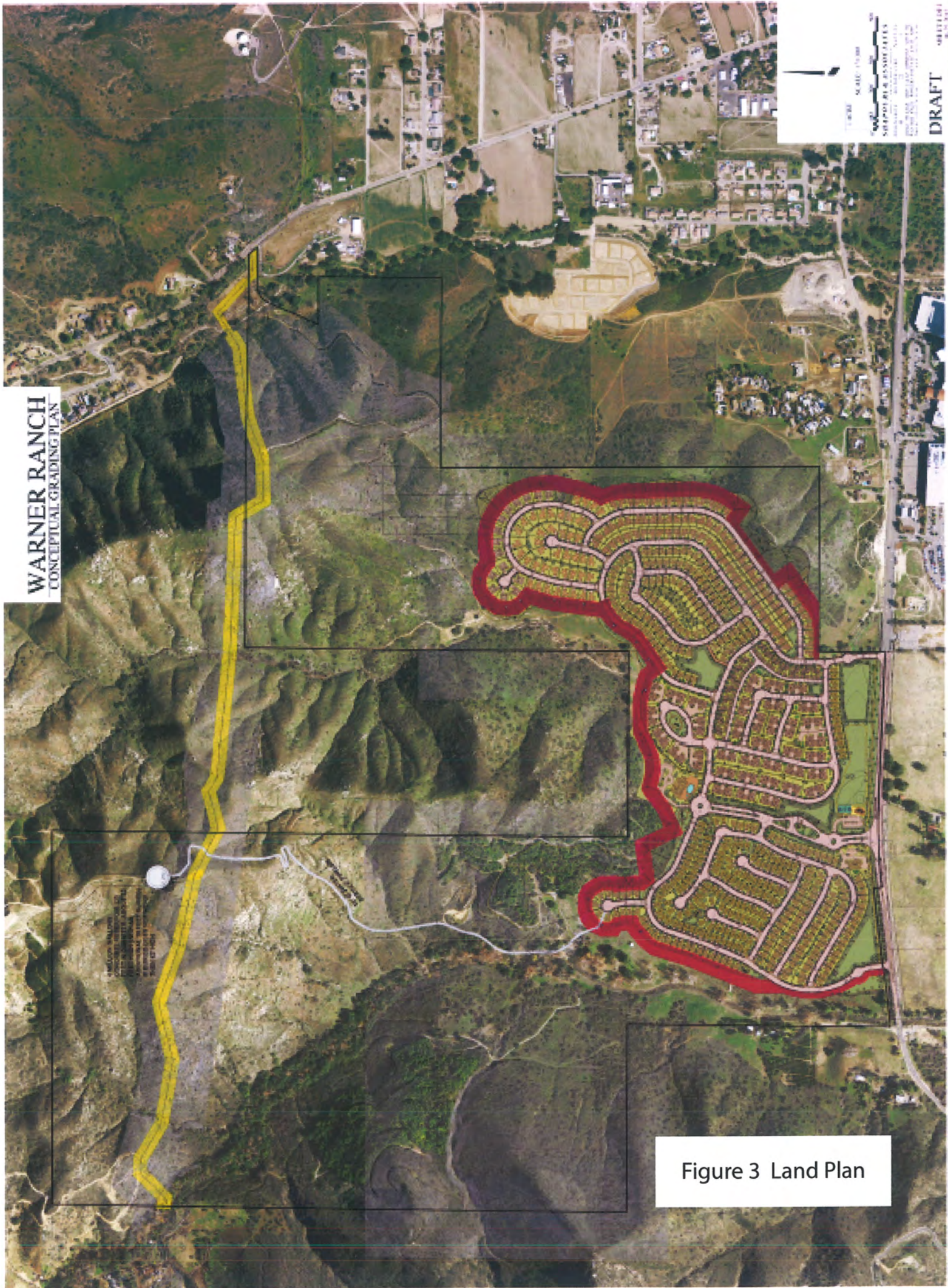


Figure 3 Land Plan

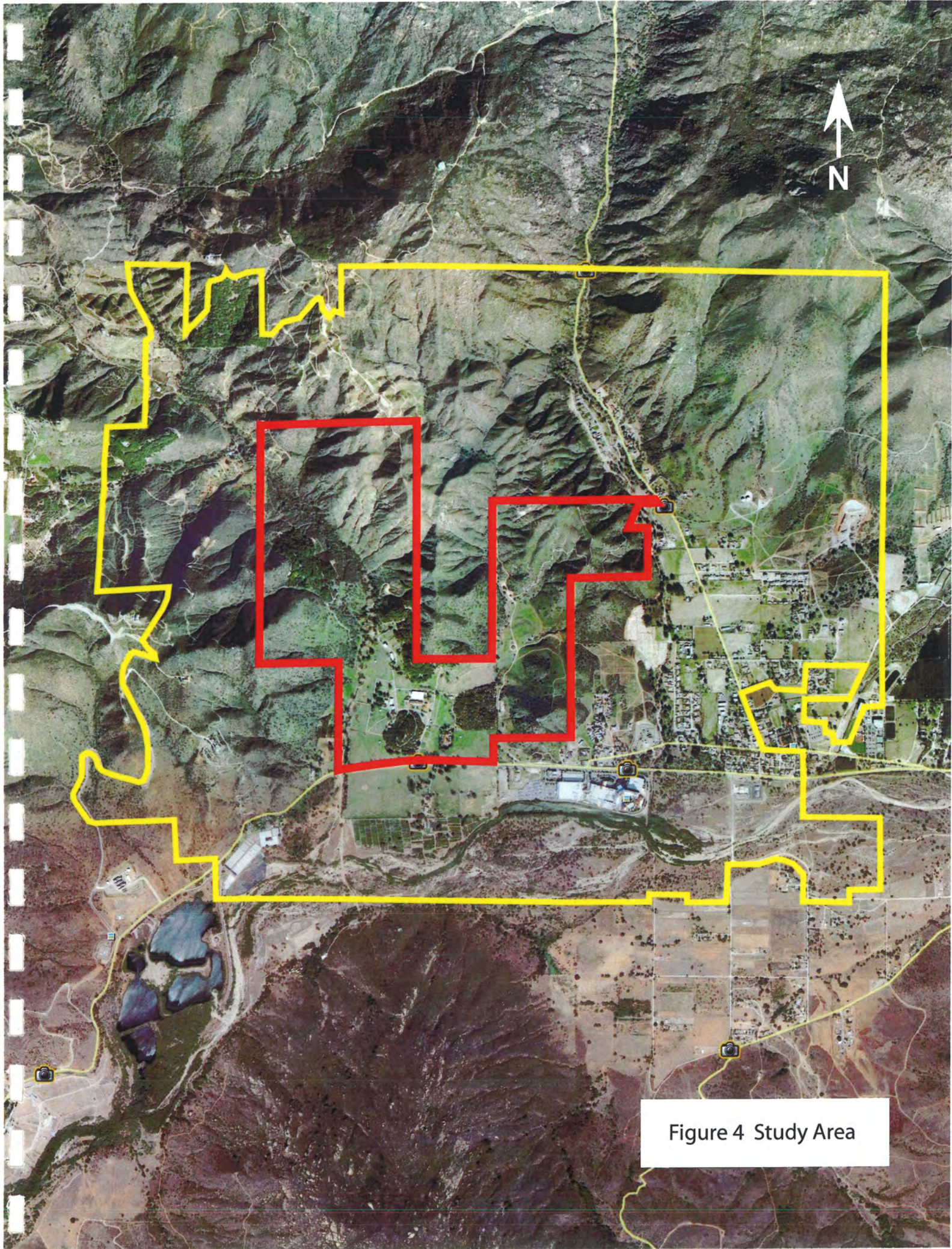


Figure 4 Study Area

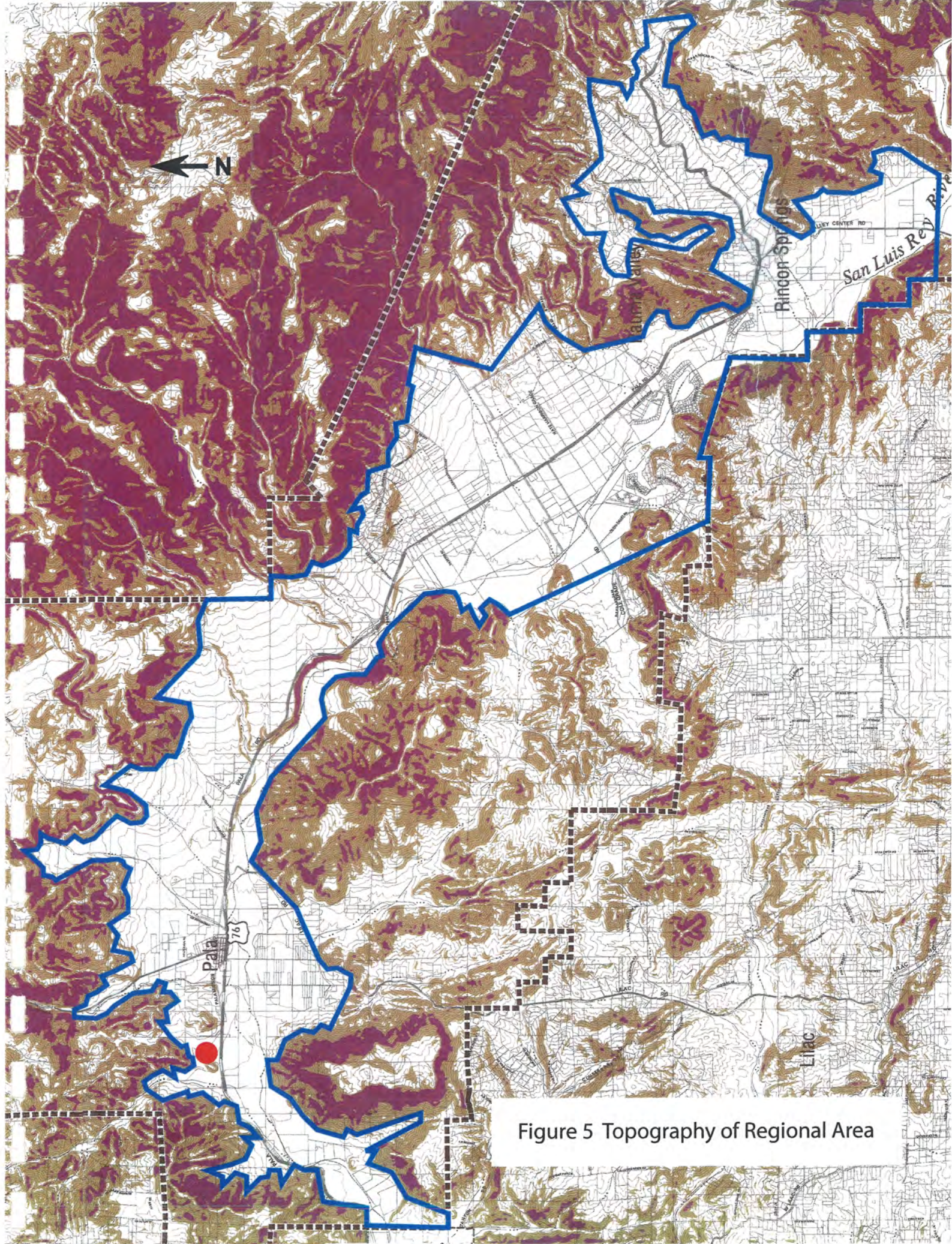


Figure 5 Topography of Regional Area

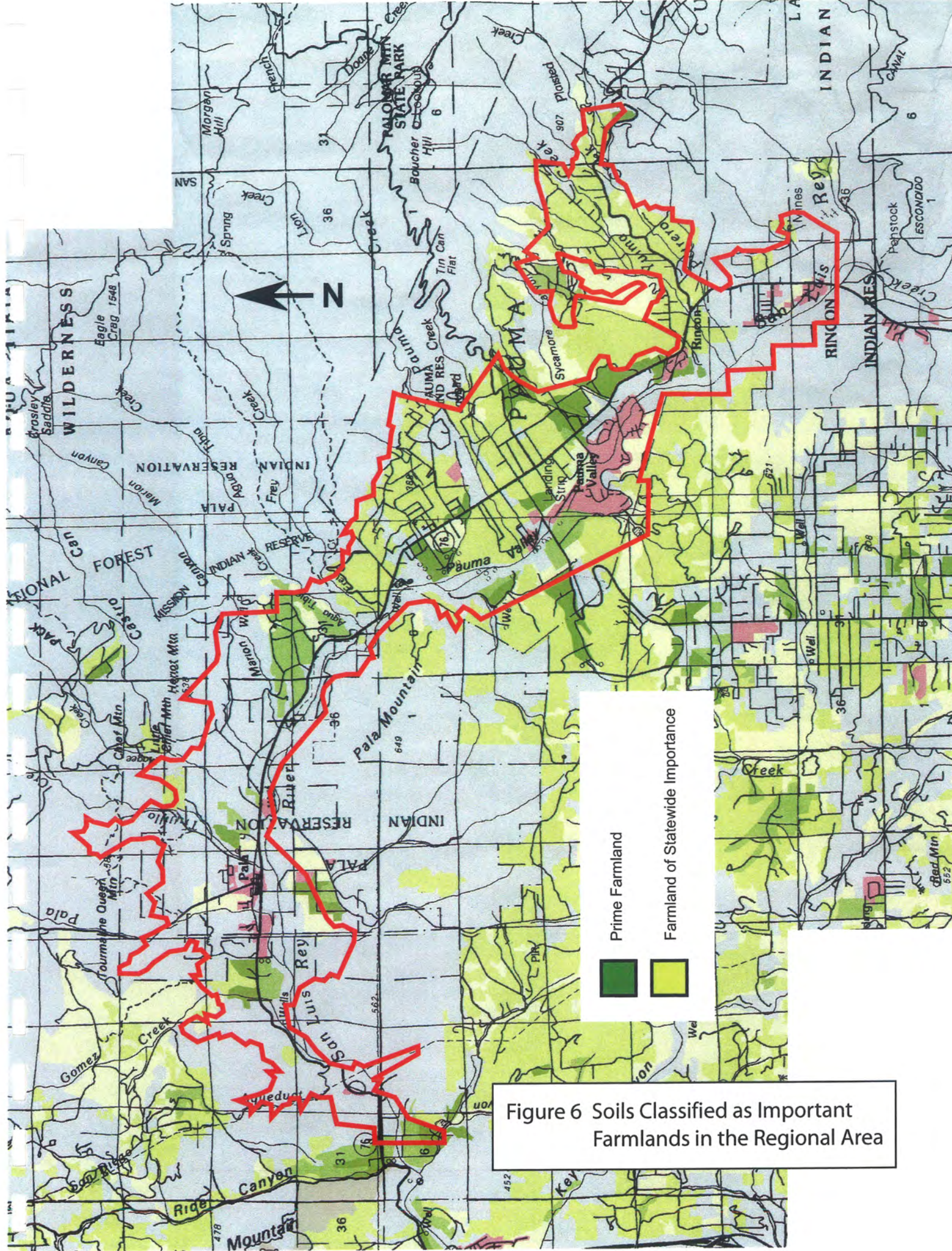


Figure 6 Soils Classified as Important Farmlands in the Regional Area

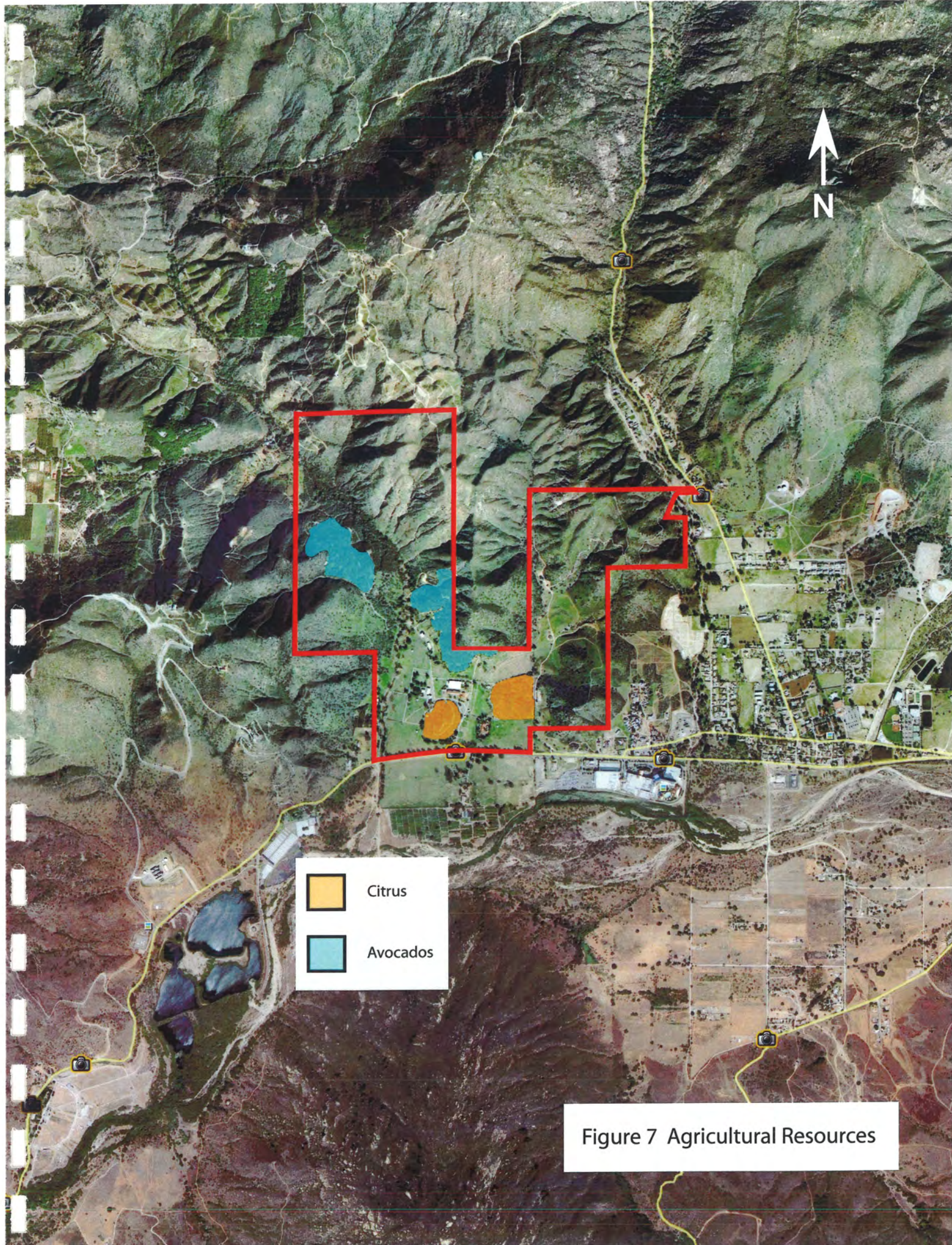


Figure 7 Agricultural Resources

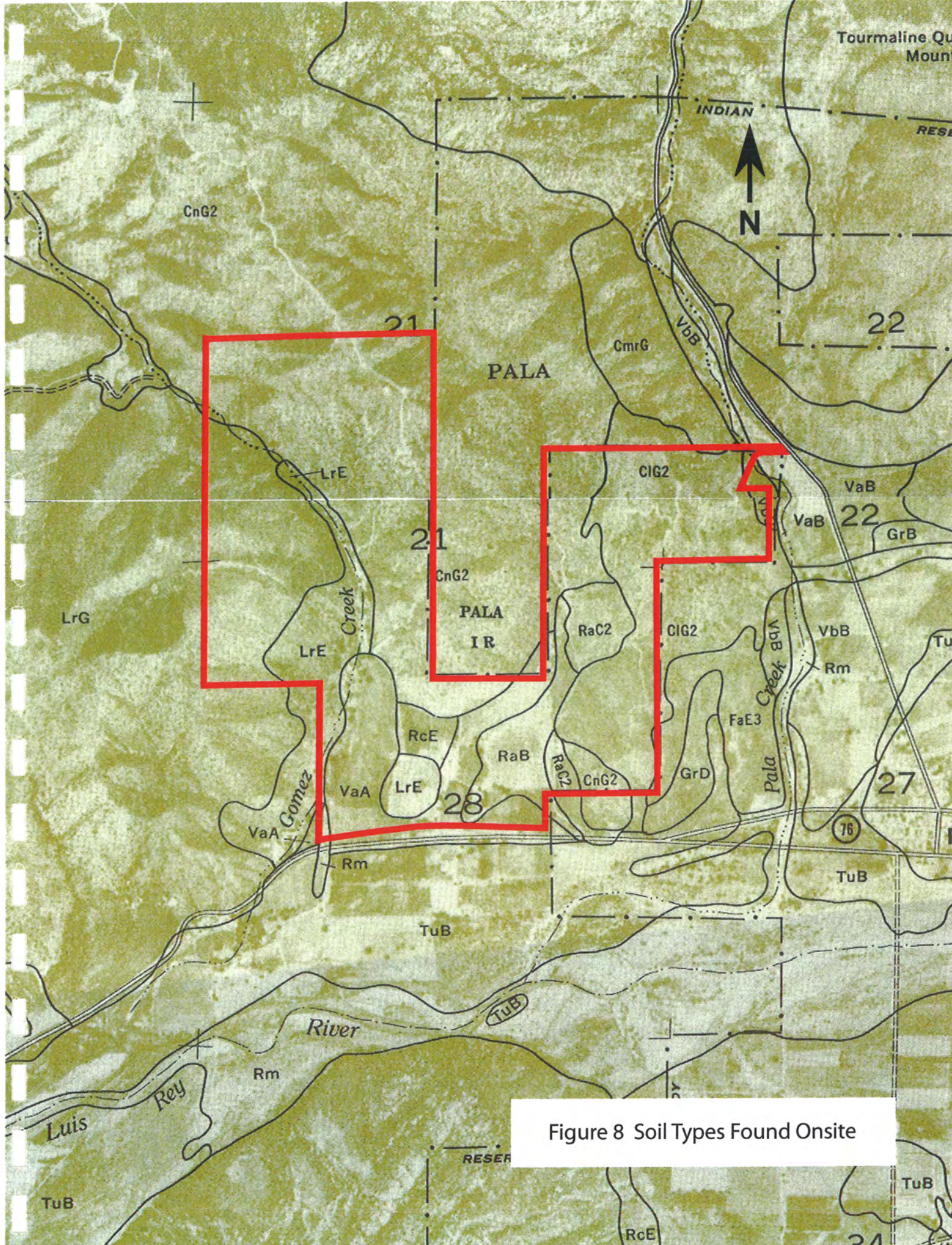
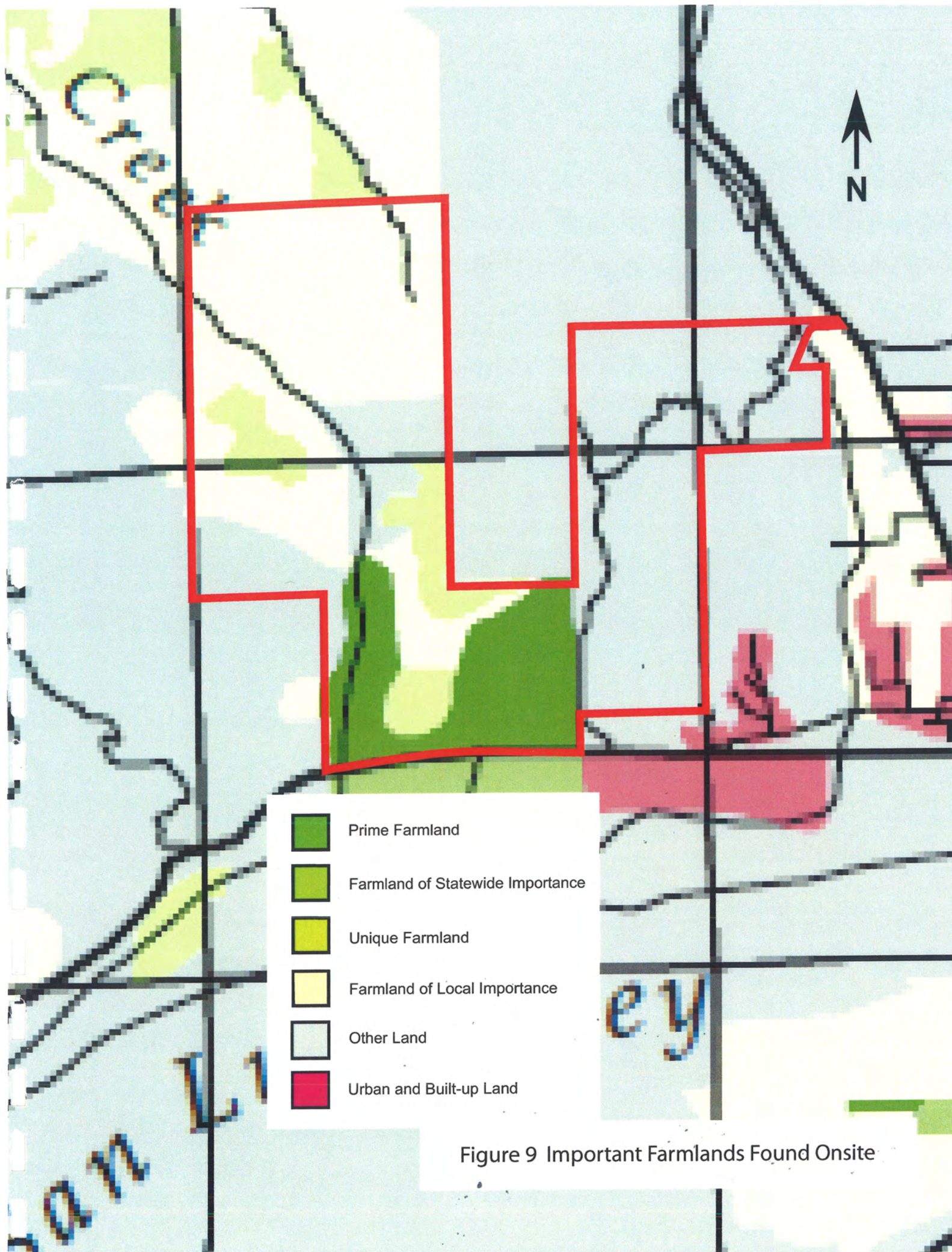
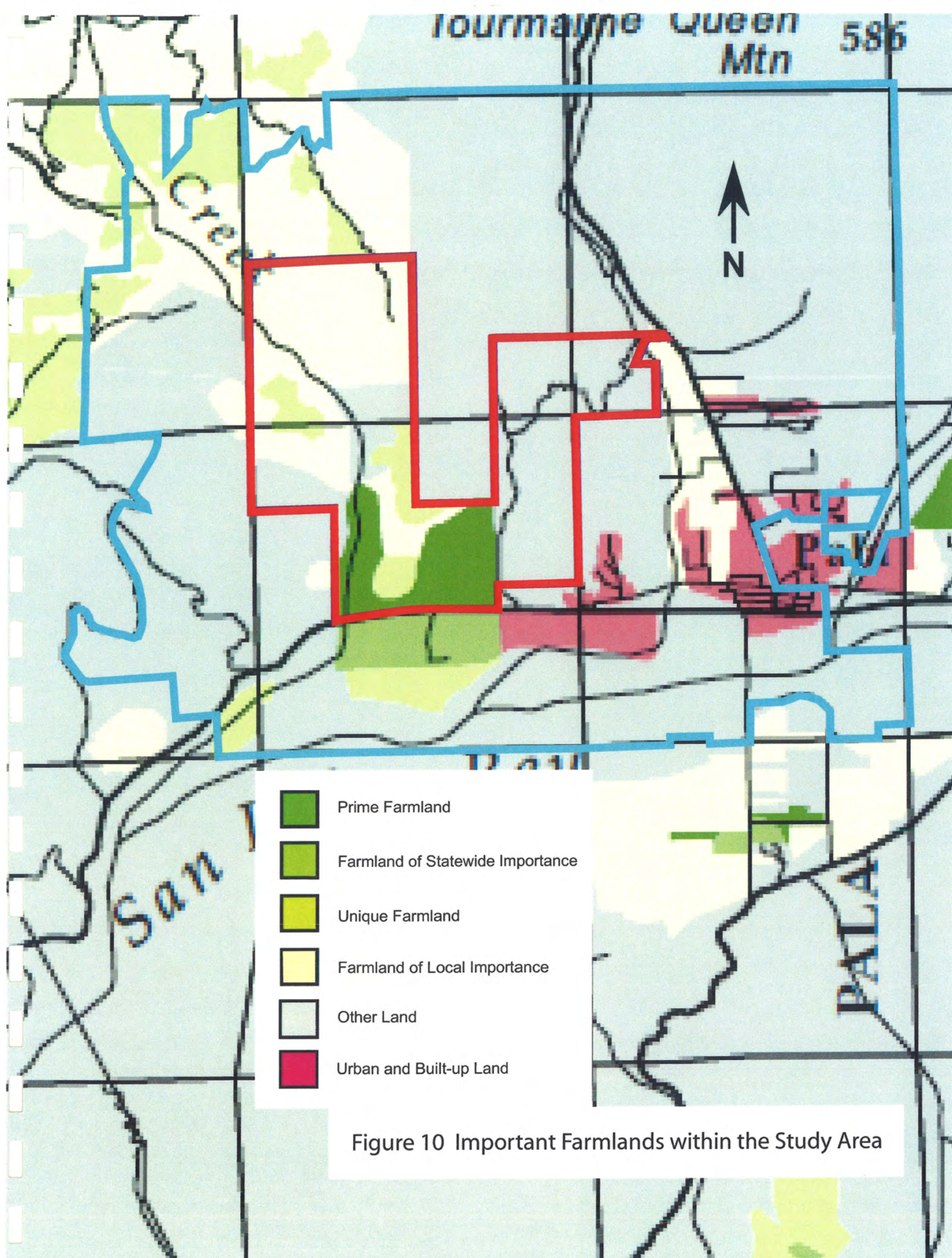
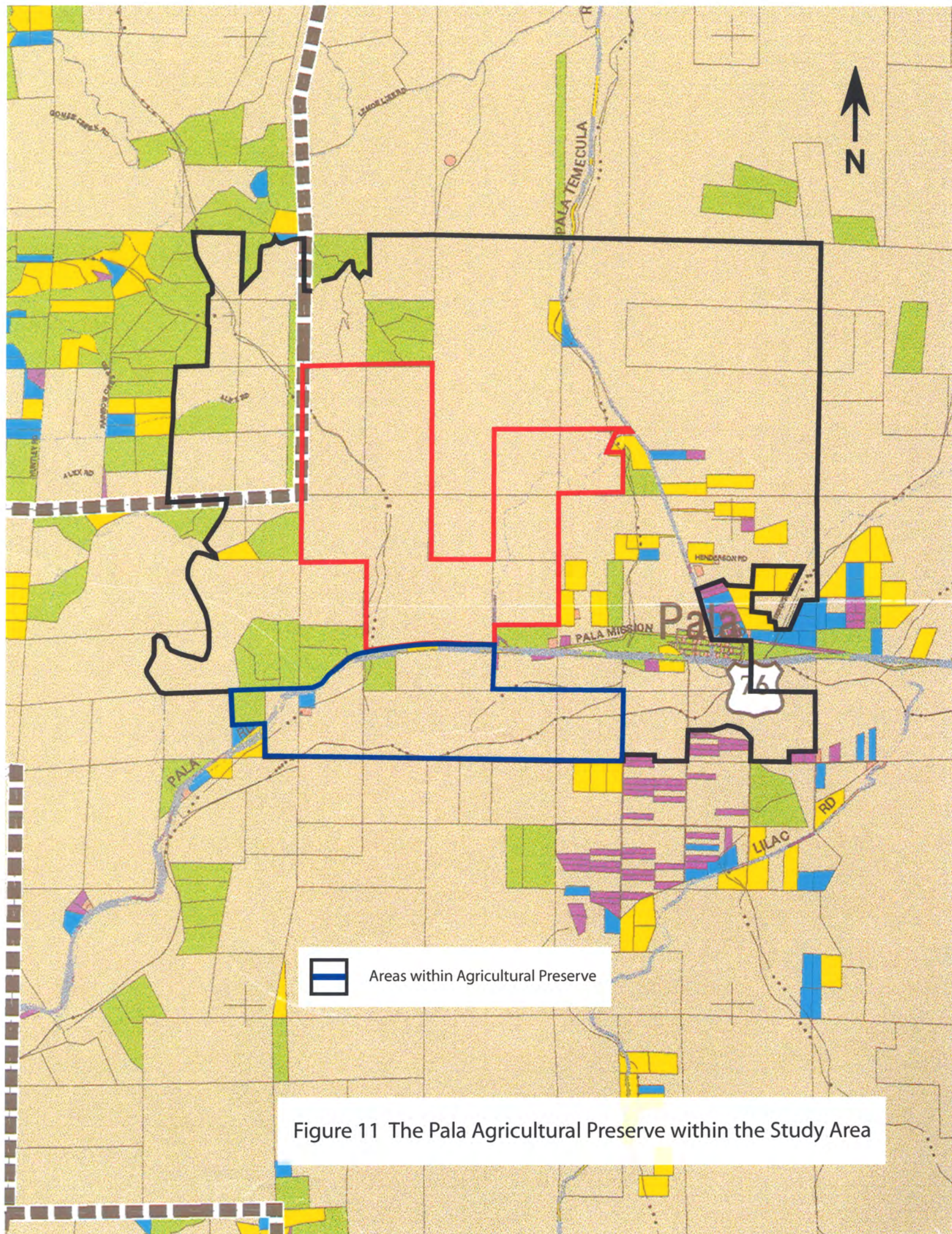


Figure 8 Soil Types Found Onsite







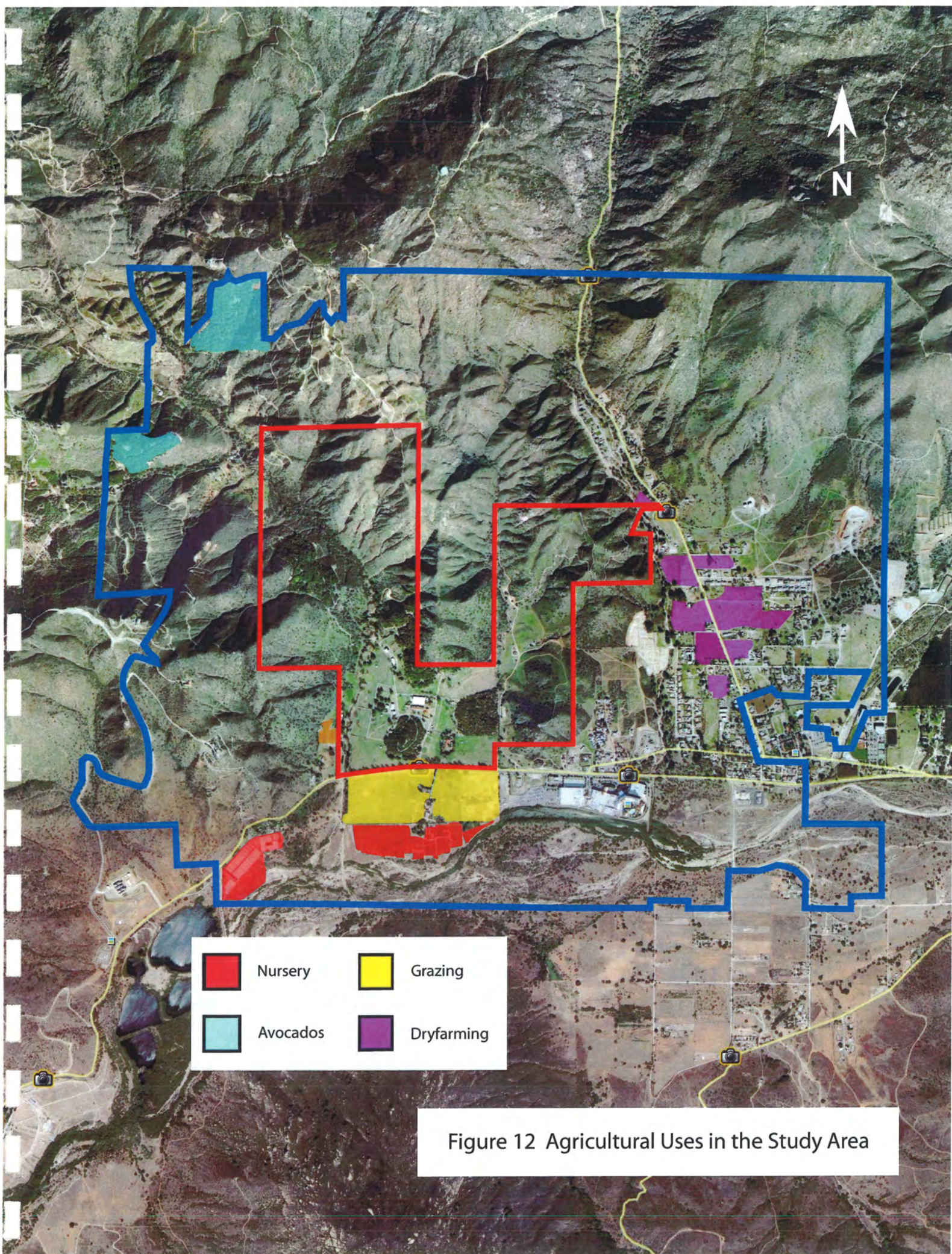


Figure 12 Agricultural Uses in the Study Area

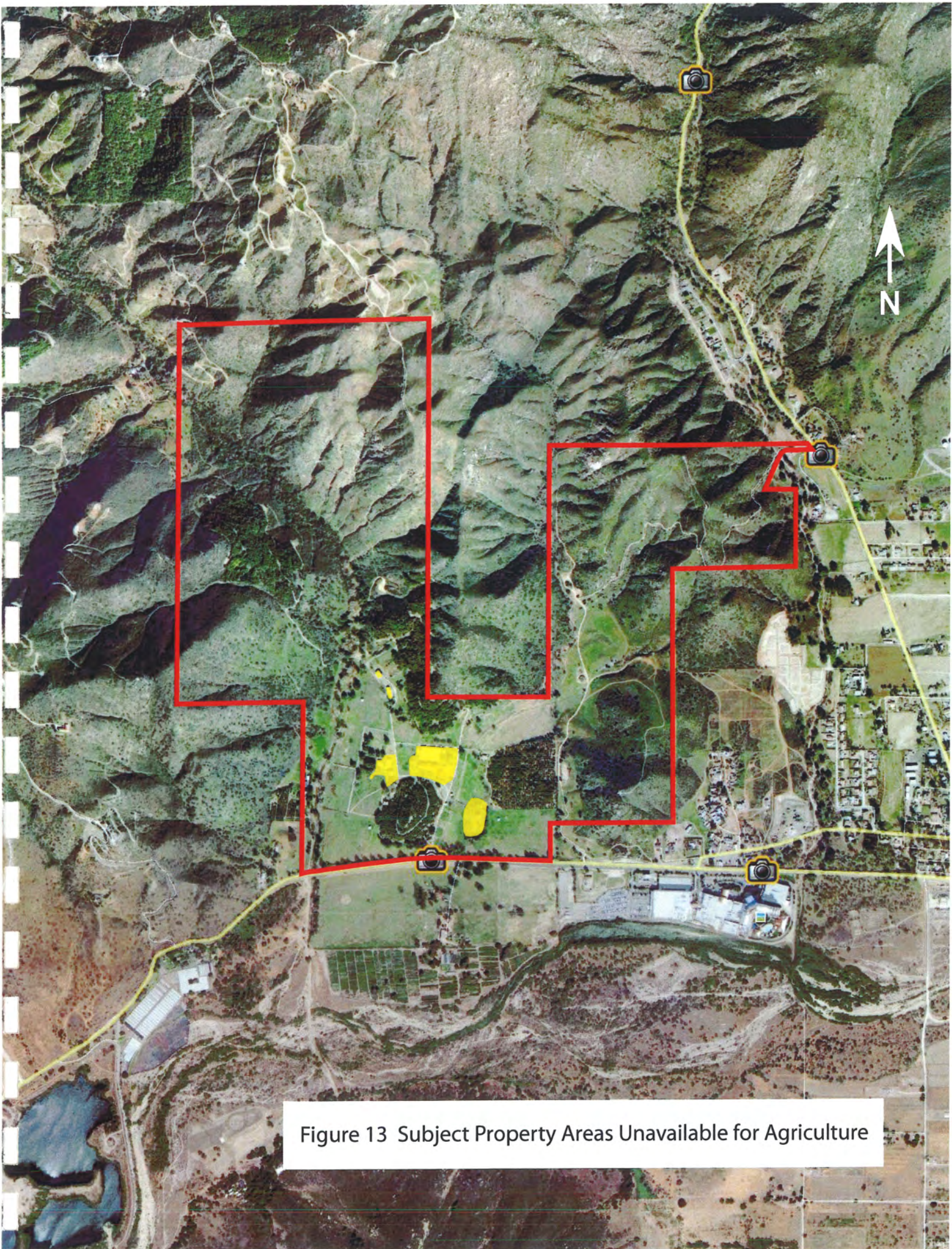


Figure 13 Subject Property Areas Unavailable for Agriculture

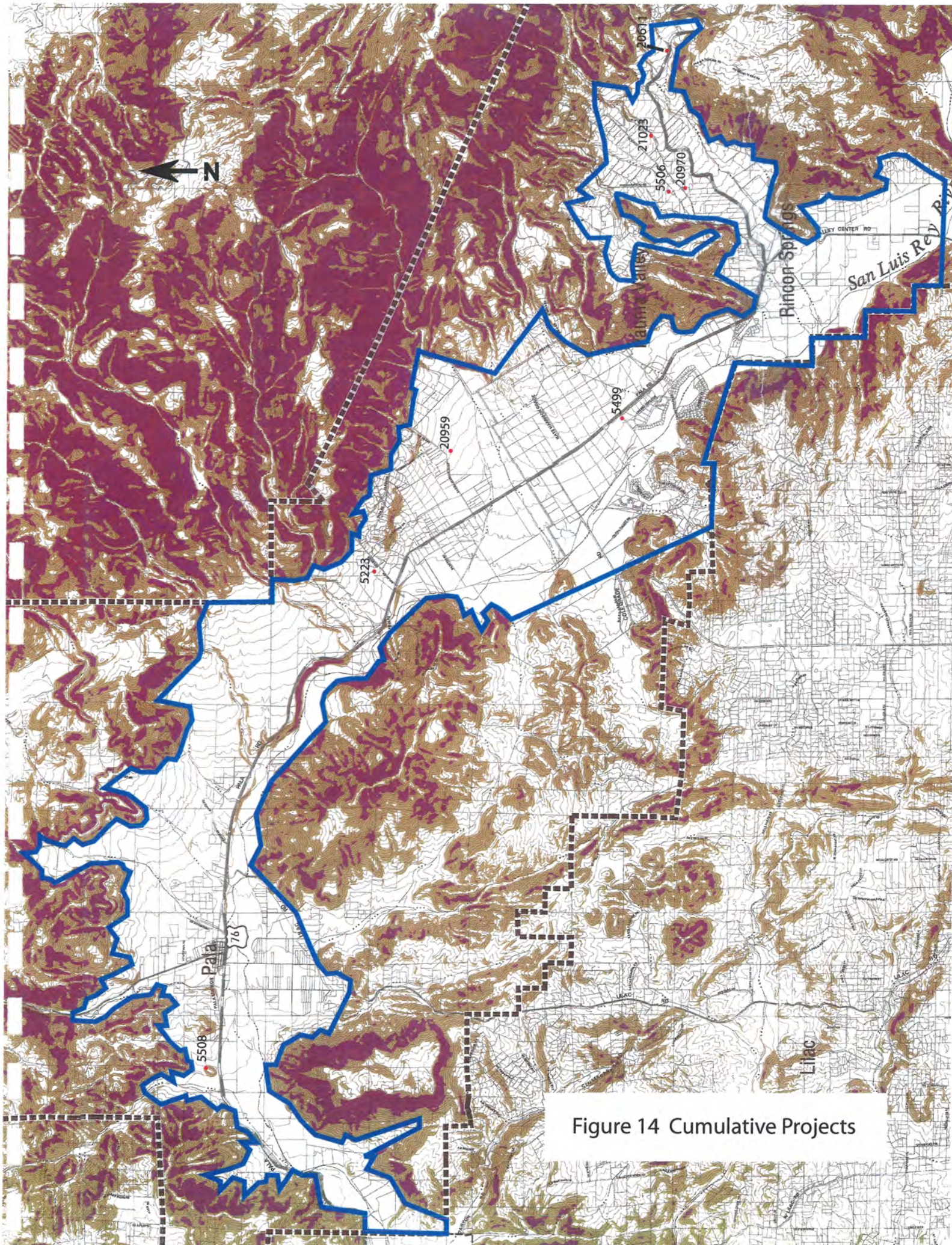


Figure 14 Cumulative Projects

## **Appendix B**

### **LARA Model Instructions**

### 3.1 LARA Model Instructions<sup>6</sup>

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:**

Water  
Climate  
Soil Quality

**Complementary Factors:**

Surrounding Land Uses  
Land Use Consistency  
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 <i>not</i> 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

<sup>6</sup> 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 <sup>7</sup>**

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 <i>and</i> 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 <i>and</i> 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.

<sup>7</sup> 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**

<b>Crop</b>	<b>Typical Water Usage Per Acre (AFY)</b>
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
<b>Average</b>	<b>3</b>

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.<sup>8</sup> Detailed descriptions of the Sunset Zones in San Diego County are included in Attachment B.

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<sup>8</sup> 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**

<b>Climate (Sunset Zone) Description</b>	<b>Rating</b>	<b>Justification</b>
<b>Zone 23</b> represents thermal belts of the Coastal Area climate 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.	<b>High</b>	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.
<b>Zone 21</b> 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.	<b>High</b>	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.
<b>Zone 20</b> 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.	<b>High</b>	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.
<b>Zone 19</b> is prime for citrus, and most avocados and macadamia nuts can also be grown here.	<b>High</b>	Zone 19 is rated high due to the suitability for growing the County's high value crops and its location close to urban areas.

<b>Zone 18</b> 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.	<b>Moderate</b>	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.
<b>Zone 13</b> 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.	<b>Moderate</b>	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).
<b>Zone 11</b> is located below the high elevation Zone 3 and above the subtropical desert Zone 13.	<b>Low</b>	Zone 11 is assigned a low climate rating due the agricultural hazards of the climate including late spring frosts and desert winds.
<b>Zone 3</b> 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.	<b>Low</b>	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<sup>9</sup> 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.

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<sup>9</sup> 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**

<b>Soil Quality Matrix Score</b>	<b>Soil Quality Rating</b>
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<sup>10</sup> within the defined Zone of Influence (ZOI).<sup>11</sup> 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

<sup>10</sup> 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.

<sup>11</sup> 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**

<b>Project's median parcel size compared to ZOI median parcel size</b>	<b>Land Use Consistency Rating</b>
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<sup>12</sup> 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**

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

<sup>12</sup> 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.

Slope is included as a complementary factor in the LARA model to account for the importance that slope plays in the viability of a piece of land for agricultural production, a flat site allowing a greater range of potential agricultural uses and facilitating mechanization of operations. Gentle topography has other benefits such as reduced difficulty in managing irrigation runoff and reduced soil erosion as compared to more steep sites. Topography is not a required factor for a determination of importance because topography limitations can be overcome at a cost if the expected return on investment is high enough to warrant the expense (i.e. container based production, mass grading).

#### **4.0 TYPICAL ADVERSE EFFECTS AND GUIDELINES FOR DETERMINING SIGNIFICANCE**

##### **4.1 Typical Adverse Effects**

Typical adverse effects to agricultural resources are best considered in relation to the various types of impacts that are considered under CEQA: direct, indirect and cumulative. Direct impacts are straightforward: important agricultural resources are converted to a non-agricultural use, significantly reducing or eliminating the productive capacity of the land. Indirect effects are widely varied and require careful analysis of particular site conditions and farming operations. Indirect effects include significant impacts to active agricultural operations, Williamson Act Contracts, or to the viability of important agricultural resources. Indirect effects can result from growth inducement and the associated extension of infrastructure that can change rural character and increase the likelihood of agriculture urban interface conflicts. Indirect impacts can be caused by significant economic impacts to active agricultural operations that compromise their on-going viability and result in increased likelihood of conversion. Significant cumulative impacts result when a project's impacts are considerable when viewed in connection with the effects of past, present and probable future projects. Cumulative impacts are difficult to assess given the market driven and adaptable nature of agriculture. For example, a loss of agricultural land may occur in one area, while new land is converted to agriculture use elsewhere. Similarly, changes in agricultural commodity market prices could result in a shift in the type of agricultural commodities produced locally. Changes in the agricultural industry that result from external market factors could appear to be significant cumulative impacts to agriculture when they may only be a result of market adaptation to external economic conditions.

##### **4.1.1. Direct Impacts**

Direct impacts occur when a project would adversely impact locally important agricultural soils on a site that is determined to be important pursuant to the County LARA model. In San Diego County, important agricultural soils include not only soils with the USDA LCC ratings of I and II or Storie Index ratings of 80 or higher, but also includes soils of lesser quality as defined by the soil candidate listing for Prime Farmland and Farmland of Statewide Importance compiled by the USDA NRCS for San

Diego County. These soil definitions expand the range of agricultural soils that are considered locally important based on the fact that soil quality in San Diego County is generally low, with very few soils having the above stated LCC and Storie Index ratings that define Prime Agricultural Land. By including the soil candidates that qualify for the FMMP Prime Farmland and Farmland of Statewide Importance category in the LARA model evaluation, an additional 168,505 acres<sup>13</sup> of land could potentially be considered an important agricultural resource than what would be considered important using the traditional soil quality definition of Prime Agricultural Land (soils having LCC I or II or SI of 80 or higher).

When considering the significance of direct impacts, the focus of a CEQA analysis is on impacts to physical resources. In the case of agriculture, the physical resources include those areas of the site that contain soil of a sufficiently high quality to support crop production. The FMMP soil criteria for Prime Farmland and Farmland of Statewide Importance are the measures used to define high quality soil. This approach recognizes the market driven nature of agriculture by focusing on the underlying physical resource in the analysis of impacts versus focusing on the actual agricultural commodity that may have been produced at a site. By focusing on underlying physical resources, this approach recognizes that conversion of a particular agricultural use may not be a significant environmental effect, if the agricultural use is not dependent on a valuable agricultural resource such as good soil.

#### **4.1.2. Indirect Impacts**

Various project features can cause significant indirect impacts to agriculture. One example is the placement of public trails on agricultural lands. Trails on agricultural lands can result in increased trespassing, theft, and disease to crops. Trails in avocado orchards can increase exposure and susceptibility to avocado root rot. Root rot is easily transmitted to avocados because the spores of the disease move naturally through the soil and are spread on horse hoofs and on the shoes of trail users (Platt and Zentmyer, no date).

A project proposed near an active agricultural use also has the potential to cause significant indirect effects to agricultural resources because of the potential incompatibility between the proposed use and existing agricultural activities. Adverse impacts caused by incompatible development near agricultural uses include, but are not limited to:

- Farm practice complaints;
- Pesticide use limitations;
- Liability concerns;
- Economic instability caused by urbanization and changing land values;
- Trespassing, theft, and vandalism;
- Damage to equipment, crops, and livestock;

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<sup>13</sup> These acreage figures are based on USDA NRCS soil survey acreages and do not account for developed or restricted lands whose soils may not be available for agricultural use

- 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 storm water 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;
- Interruption of cold air drainage.

The Farmland Protection Action Guide published by the Institute for Local Self Government (2002) summarizes the conflicts that occur at the agriculture urban interface as follows:

“This situation is a common one: A fast-growing community approves a subdivision located on farmland, placing new homes right next to farms. Proximity to the bucolic landscape is one of the development’s most attractive features. But the new homeowners are soon disillusioned by pesticide drift, night harvesting, odor, flies, dust and slow-moving tractors.

Farmers also have concerns about adjacent development. Theft and vandalism increase when the surrounding area urbanizes. Imported pests and increased traffic also affect operations. As a result, farmers see the next wave of development as inevitable, and accordingly reduce investments in their operation. The operation becomes less profitable, real estate becomes more valuable, and soon another farmer is willing to entertain offers from developers.

Farming and residential uses are fundamentally incompatible. When they are located next to one another, local agencies can anticipate significant complaints and problems. However, there are several strategies that local agencies can use to head off or reduce such problems, such as creating physical barriers and educating residents to create more appropriate expectations. Such approaches can improve both the quality of life in new subdivisions and farmers’ ability to remain a viable part of the local agricultural economy.”

As described above, conflicts at the agriculture urban interface flow in two directions: from existing agricultural use to a newly established non-agricultural use and from a newly established non-agricultural use, to existing agricultural use. Nuisances perceived by new non-agricultural uses near farms may include dust; insects, pests and vectors; lighting; noise; odor; seasonal harvesting; farm-worker housing, smoke; truck traffic; pollution, and pesticide use. Although the focus of this document is on the impacts to agricultural resources and not the impacts that farms may have on new residential or urban uses, the adverse effects perceived by new urban neighbors near farms must be recognized as a contributor to the degradation of the viability of surrounding farms, as detailed below.

Nuisances perceived by urban neighbors can trigger complaints about farming practices to the farmers themselves or to regulatory authorities. The conflicts can result in increased liabilities for farmers and legal challenges. Farmers may feel pressure to discontinue their agricultural operation as urban uses encroach, reducing investments in the operation or causing reduced productivity and income when complaints force changes in normal farming practices. Nuisance complaints filed with regulatory authorities may force agricultural operators to modify farm practices to comply with requirements and avoid monetary fines. In some cases, restrictions on pesticide use near residences or schools may force abandonment of portions of farm fields to meet buffer distances required by law.

Potentially significant indirect impacts must be identified during the planning process to ensure that a proposed project is designed to reduce or eliminate an impact before it would occur. Through effective planning, "mitigation by design," and implementation of appropriate land use policies and tools, some or all of the significant effects that may occur at the agriculture urban interface can be partially or fully mitigated.

#### **4.1.3. Cumulative Impacts**

The typical adverse effects discussed in previous sections may result in significant cumulative impacts when other projects in the area contribute to similar significant direct or indirect impacts to agricultural resources and those impacts are determined to be cumulatively considerable.

Growth inducement can also contribute to a significant cumulative impact to agricultural resources by removing barriers to growth in an agricultural area, ultimately causing the conversion of agricultural land. This may occur when infrastructure is extended to previously unserved areas; when a jurisdiction or district's Sphere of Influence is expanded; when density is increased above designated general plan or zoning limits; or when land use intensity is changed or increased. Growth often improves the attractiveness and feasibility of non-agricultural uses in historically rural and agricultural areas, resulting in agricultural conversion. Growth into agricultural areas can significantly impact agricultural lands by facilitating agricultural conversion through lower costs of development as urban level services become available. Growth also results in increased land values which increases pressure for agricultural uses to convert and makes agricultural expansion less economically feasible. Growth in an agricultural area can also significantly increase urban/agricultural interface conflicts in the long term, creating additional pressure to convert the agricultural use to a non-agricultural use.

## 4.2 Guidelines for Determining Significance

When a lead agency determines that a project may have a potentially significant adverse effect to agricultural resources, an agricultural resources technical report may be required to assess the significance of the potential impacts and to identify measures to reduce the significance of identified impacts. Where it is feasible for County staff to assess the significance of agricultural resource impacts and to provide recommendations for reducing the significance of potential impacts without completion of a technical report, County staff will provide such recommendations instead of requesting completion of a technical report. County staff will base their determinations and recommendations on these significance guidelines.

**An affirmative response to or confirmation of any one of the following Guidelines will generally be considered a significant impact to Agricultural Resources as a result of project implementation, in the absence of scientific evidence to the contrary:**

### 4.2.1 Impacts to important onsite agricultural resources

***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.***<sup>14</sup>

The following are examples of projects that would not typically substantially impair the ongoing viability of the site for agricultural use:

- Minor expansions or alterations of an existing use, such as uses approved under an administrative or minor use permit;
- Single family residence grading permits;
- Boundary adjustments and Certificates of Compliance;
- Agricultural intensification;
- Accessory or auxiliary uses such as wireless telecommunication facilities and installation of stormwater treatment or drainage facilities;
- Road improvements/widening and other minor public facility improvements; and
- Any project, including residential subdivisions, that would substantially avoid impacts to Prime and Statewide Importance soils while maintaining agricultural viability.

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<sup>14</sup> Significance Guideline 4.2.1. This significance guideline recognizes that projects proposed on an important agricultural resource as defined by the LARA model may not result in significant impacts to the resource if the project avoids the important soil resources (Prime and Statewide importance soils) on the project site or if the project would not substantially impair the ongoing viability of the site for agricultural use.

The determination whether the project would substantially impair the viability of an important agricultural resources that meets the soil quality criteria for Prime or Statewide Importance is primarily based on the extent to which the project avoids the resources and the extent to which the remaining resource would be viable for agricultural use. A variety of interrelated factors need to be considered to determine the viability of a site for agricultural use; such as the size of the area, topographic relief, and surrounding land use. Consideration of the surrounding types of agricultural uses is also important as this will give an indication of the type, size and requirements of agricultural use typical for the area. Residential subdivisions that would result in parcel sizes that could support agriculture and that substantially avoid the important physical soil resources onsite would not usually impair the viability of the resource, based on the prevalence of small farms in the County and high land prices that promote high value production on small parcels. Agricultural resources are not considered avoided when they are placed within biological open space easements or other easements that would preclude the use of the land for agriculture. In addition, resources are not avoided when they are placed within a road right of way; in the location of proposed structures or paving, and generally within 15 feet of front and side yards of residences and within 30 feet from the rear yard of residences as a result of project implementation. An assumption is made that no agriculture will occur within the stated distances from residences based on the fact that an average homeowner will usually maintain landscaping and outdoor recreation areas around a residence.

#### **4.2.2 Indirect Impacts to Agricultural Resources**

- a. The project proposes a non-agricultural land use within one-quarter mile of an active agricultural operation<sup>15</sup> 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.<sup>16</sup>***
- b. The project proposes a school, church, day care or other use that***

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<sup>15</sup> Active Agricultural Operation is defined in Attachment A of this document.

<sup>16</sup> Significance Guideline 4.2.2.a. The extent to which the project proposes a use that is similar to those already present in the surrounding area is an important factor in considering the significance of the placement of a non-agricultural use in proximity to an agricultural operation. For example, if a residential subdivision consistent with existing densities in the surrounding area is proposed, the likelihood that the residential subdivision would constitute a significant indirect impact to agricultural resources is reduced based on the fact that similar land uses already exist in the area. On the other hand, if a high density residential subdivision is proposed that is not consistent with existing densities in the surrounding area, the proposed project would have a greater likelihood of resulting in indirect impacts to agricultural resources based on the likely introduction of increased traffic, new and improved roads (whose users may not appreciate agricultural trucks and traffic), and increased potential for land use conflicts that did not exist in the more rural environment prior to the project. In both scenarios however, the placement of the proposed use in relation to the surrounding active agricultural operation is of central importance to the determination of significance. A project proposed contiguous to an agricultural operation or Contract land would require greater scrutiny than a project separated from the agricultural operation or Contract land by other land uses.

***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.***<sup>17</sup>

- c. The project would involve other changes to the existing environment, which due to their location or nature, could result in the conversion of offsite agricultural resources to a non-agricultural use or could adversely impact the viability of agriculture on land under a Williamson Act Contract.***<sup>18</sup>

A determination of whether the project could cause a potentially significant impact in accordance with the above guidelines requires consideration of the customary agricultural activities associated with surrounding agricultural operations and the degree to which those activities would be compatible with the proposed project. The distance guidelines included within Significance Guidelines 4.2.2.a and 4.2.2.b. are based on the typical distances that land use conflicts would be expected to potentially occur based on the sensitivity of the proposed land use. 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. One-quarter mile is chosen as the minimum screening distance for identification of potential indirect impacts based on available literature on the typical distances that agricultural interface issues such as dust, noise, and conflicts with pesticide use typically occur.<sup>19</sup>

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<sup>17</sup> Significance Guideline 4.2.2.b. Projects that would have sensitive receptors (i.e. children, elderly, etc.) located near an agricultural operation or Williamson Act Contract land require additional scrutiny to ensure the uses will be compatible. The presence of a school can result in pesticide use limitations for agricultural operators, and the impact of those limitations must be assessed. It should be noted that the County of San Diego does not have jurisdiction over the approval of public schools, however large projects, such as subdivisions, may propose a location for a future public school. The environmental analysis of the project must include an assessment of the school's potential impacts to surrounding agricultural resources. The County does have jurisdiction over private schools proposed within its jurisdiction.

<sup>18</sup> Significance Guideline 4.2.2.c. This significance guideline is taken directly from the CEQA Guidelines, Appendix G, II(c) Agricultural Resources. It is similar to the two guidelines that precede it except that it is more general and does not include any distance guidelines. This guideline is included to capture potential indirect impacts to agricultural operations that may not be captured in the more specific Significance Guidelines 4.2.2.a and 4.2.2.b.

<sup>19</sup> The State of Queensland Planning Guidelines (1997) identifies 0.19 miles as an adequate separation for most nuisance issues such as dust, noise and pesticide use. Depending on the types of conflicts identified in addition to local conditions, the distance where conflicts could occur may be more or less than 0.19 miles. One-quarter mile is provided as a conservative screening tool.

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 avocados 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. For example, a project proposed near but not adjacent to orchard crops, will not usually result in significant indirect impacts to these resources. In contrast, projects proposed near but not adjacent to a confined animal facility, would more likely have significant indirect impacts to the agricultural use. Orchard crops such as avocados and citrus typically have fewer compatibility issues than nurseries, confined animal facilities, and row crop production due to lower chemical treatments, less farmworker presence, less truck traffic, and fewer odors. Where appropriate, available information and technical opinion from the Department of Agriculture, Weights and Measures will be obtained to aid in the determination of agricultural compatibility.

Any project that proposes a school must evaluate potential impacts within one mile from the project site because existing regulations can restrict certain normal agricultural activities within one 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. Significance Guideline 4.2.2.c. is a more general guideline to address the variety of potential indirect impacts that may not be foreseen in the more specific significance guidelines.

#### **4.2.3 Conflicts with Agricultural Zoning and Williamson Act Contracts<sup>20</sup>**

***The project conflicts with a Williamson Act Contract (Contract) or the provisions of the California Land Conservation Act of 1965 (Williamson Act).***

The above significance guideline addresses conflicts with the Williamson Act. Any conflict with a Contract or the Williamson Act is significant because conflicts with Contract provisions and the Williamson Act are prohibited by law. Furthermore, no project may be approved that is in conflict with a Contract or the Williamson Act. Indirect impacts to offsite Williamson Act Contract land will be addressed in significance guideline 4.2.2.

#### **4.2.4 Cumulative Impacts**

The guidelines for determining the significance of cumulative impacts are based on the same guidelines used to determine the significance of project level impacts (Guidelines 4.2.1, 4.2.2, and 4.2.3) except the analysis considers the significance of the cumulative impact of the individual project impact in combination with the impacts caused by the projects in the cumulative study area that would also impact important agricultural

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<sup>20</sup> Conflicts with zoning for agricultural use should not occur in the County of San Diego because there are no exclusive agricultural zones in the County. In general, a variety of land uses are permitted in agricultural zones either by right, subject to limitations, or by issuance of a conditional use permit.

resources. A project that is determined not to be an important agricultural resource under the LARA model, 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.

Cumulative impacts are those caused by the additive effects of other project's impacts to agricultural resources over time. A project's impact may not be individually significant, but the additive effect when viewed in connection with the impacts of past projects, present projects, and probable future projects may cause a significant cumulative impact to agricultural resources. If the project would impact agricultural resources, the project must assess the potential for significant cumulative impacts to occur. If the project would directly impact important onsite agricultural resources, the focus of the cumulative impact analysis should be on the cumulative direct impact to agricultural resources that the proposed project and other projects in the cumulative analysis area would cause. If the project could indirectly impact agricultural resources, the cumulative analysis should focus on the indirect impacts that the proposed project and other projects in the cumulative analysis area would cause when implemented.

To identify the significance of the potential cumulative impact to agriculture, both a quantitative and a qualitative analysis of the potential loss of agricultural resources must be undertaken. In general the qualitative analysis will evaluate the cumulative loss of agricultural resources based on past, present and future projects within a cumulative study area. More specific direction for completing the quantitative portion of the analysis of cumulative impacts is provided in the Report Formats. For the qualitative analysis, consideration should be given to the extent that the land within the cumulative study area is primarily agricultural versus residential or another dominant land use. Cumulative losses of agriculture in primarily agricultural communities is viewed as having a higher likelihood of contributing to a significant cumulative impact since the degradation of an entire agricultural community would usually be more severe than the loss of remnant portions of scattered agricultural land located among another more dominant land uses. Another qualitative consideration for the cumulative analysis is the extent that the land within the cumulative study area is experiencing development pressure to convert agricultural land to a non-agricultural use. The potential for conversion is evaluated based on the qualitative assessment of the past, present, and future projects that could impact agriculture. Careful consideration must be given both the potential direct and indirect agricultural conversion that could result from the cumulative projects. In general, if the agriculture in the cumulative study area is not under significant pressure to convert to non-agricultural uses, or a significant amount of lands would remain available for agricultural use after consideration of the potential cumulative impacts, the likelihood of the project having a significant cumulative impact is reduced.

## 5.0 STANDARD MITIGATION AND PROJECT DESIGN CONSIDERATIONS

In the event a potentially significant impact may occur, mitigation must be proposed or the project redesigned to lessen, avoid or compensate for the impact. As defined by the CEQA Guidelines Section 15370, mitigation includes measures to avoid, minimize or rectify impacts or to compensate for impacts by replacing or providing substitute resources. Agricultural resource mitigation measures and design considerations will depend on the specific resources and conditions for each project under consideration. The following discussion addresses a range of mitigation measures and design considerations that may be used to lessen or compensate for the identified impact.

### 5.1 Direct Impacts

#### 5.1.1 Onsite Preservation

If a project would exceed Significance Guideline 4.2.1, redesign of the project will usually be required to minimize impacts to agricultural resources that meet the Prime and Statewide soil criteria and/or to provide a project design where agricultural use could remain viable. To the extent feasible, preservation of agricultural resources should occur onsite. As discussed in Section 4.1.1, soils that qualify for the Prime or Statewide Importance Farmland designations are the resources that should be avoided. Therefore, when a project exceeds Significance Guideline 4.2.1, mitigation or project design measures to minimize the project's direct impacts to agricultural resources is required. Table 12, Agricultural Preservation Requirements identifies minimum agricultural preservation ratios that would usually be adequate to mitigate for direct project impacts.

**Table 12. Agricultural Preservation Requirements**

Project Impact	Minimum Agricultural Preservation Ratio
The project will impact agricultural resources that meet the soil quality criteria for Prime Farmland and Farmlands of Statewide Importance	1:1

Preserved agricultural resources must remain viable for continued or future agricultural production. The following factors should be considered in determining the viability of the area to be preserved for agricultural use:

- The adequacy of the area to be preserved to accommodate agricultural use;
- Land use compatibility between preserved agricultural resources onsite and non-agricultural land uses located offsite or proposed onsite;
- The likelihood that the area to be preserved will remain available for agricultural use.<sup>21</sup>

To determine the adequacy of the area to be preserved for agricultural use, a variety of

<sup>21</sup> Preservation of agricultural resources ensures that the land would remain available for agricultural use; however, the choice to use the land for agriculture is the decision of the individual property owner.

site specific factors must be taken into account. For example, an area of the site with significant topography or rock outcroppings would not be considered adequate to accommodate agricultural use. Similarly, while it may be viable to preserve a five acre area of land within a residential parcel for agricultural use, preservation of one-half acre areas within individual residential parcels would not likely be considered viable.

### **Project Design Considerations**

The following approaches should be considered in designing a project to preserve onsite agricultural resources:

- Locate proposed development (i.e. residential pads) in areas least suitable for agricultural use;
- Where the General Plan Designation allows, cluster residential parcels and provide larger agricultural parcels to protect long-term agricultural viability;
- Where the General Plan does not allow clustering, design lot configuration or reduce parcel yield to achieve agricultural preservation and agricultural viability;
- For planned developments, propose a common ownership parcel over quality agricultural lands to achieve preservation requirements;
- Locate development on the least productive agricultural soils wherever possible; and
- Minimize locating development on the most productive soils wherever possible.

### **Limited Building Zones (LBZ)**

Where necessary, LBZ easements will be used as the typical mechanism to ensure that land on the project site will remain available for agricultural use. LBZ easements would typically restrict habitable structures, swimming pools, and other structures that would preclude the use of the land for agriculture. Accessory structures incidental to an agricultural use would be permitted. The requirement to apply a LBZ easement to preserve the availability of agricultural resources depends on the likelihood that the land would remain available for agricultural use without the easement. For example, a ten acre parcel with important onsite agricultural resources would not usually require a LBZ easement to protect the land as available for agriculture; however a one or two acre parcel would usually require a LBZ easement due to the higher likelihood that the land could be precluded from future agricultural use by future accessory structures such as second dwelling units or swimming pools. Where agricultural resource preservation is proposed on residential parcels smaller than two acres, a LBZ would typically be required. Where agricultural resource preservation is proposed on residential parcels larger than two acres, the need to apply a limited building zone will be considered, but is not usually anticipated to be required.

### **Justification for Onsite Preservation**

Avoiding agricultural resources on residential parcels may be a viable mechanism to preserve agricultural resources, because in San Diego County small farms typically support high value agriculture and high land values make purchase of large farms

financially prohibitive for most farmers. Creating smaller parcels that could be used for agriculture may increase the economic feasibility of starting an agricultural operation. As stated by the County Agricultural Commissioner in 1997, "The cost of land in the County makes it prohibitive for many new farmers to begin an operation on a large parcel so the ability to farm small parcels is crucial to the success of future agriculture in San Diego County."

The viability of farming on residential parcels is further supported by the fact that in San Diego County there are no exclusive agricultural zones. Farming is allowed in any zone, providing flexibility for agricultural operations to occur where the resources and site conditions make it favorable to do so. This is in contrast to other areas of the state where large tracts of farmland exist with few non-agricultural land uses intermixed among the farmland. In San Diego County, farming typically occurs among residential land uses. The creation of smaller, more affordable, and viable agricultural parcels creates opportunities for farming when considering the cost of land in San Diego County and the fact that high value agriculture on small parcels is common here.

Furthermore, the high cost of land cannot be separated from the economic viability associated with starting an agricultural operation or activity on a piece of land. The purchase of land for farming is increasingly both a farming decision and a decision regarding one's place of residence, as is demonstrated by the fact that in San Diego County, 77% of farmers live on farm and 90% of farms operate under full ownership versus operating as tenants or under leasehold (USDA NASS, 2002). These statistics combined with high land costs supports the rationale that residential subdivisions do not always constitute a significant adverse impact to agriculture if important soil resources are preserved and it can be demonstrated that farming would remain viable after development.

The one-to-one agricultural resource preservation requirement shown in Table 12 is consistent with recommendations typically provided by the DOC to address impacts to agricultural resources under CEQA. The DOC "encourages the use of agricultural conservation easements on land of at least equal quality and size as partial compensation for the direct loss of agricultural land. If a Williamson Act contract is terminated, or if growth inducing or cumulative agricultural impacts are involved, we [DOC] recommend that this ratio be increased. We [DOC] highlight this measure because of its acceptance and use by lead agencies as mitigation under CEQA." (DOC, 2006).

While agricultural conservation easements are provided as an option for project proponents, it would generally be difficult to implement an agricultural conservation easement within a reasonable period of time on a project-by-project basis. Without a program to identify the areas where agricultural resources should be protected and to fund and administer such a program, implementation of agricultural conservation easements will be difficult. Therefore, one to one agricultural resource preservation will generally be accomplished onsite, including within residential parcels where the resource would be viable for agricultural use.

The approach to agricultural preservation in these guidelines is consistent with policies in the Open Space Element of the General Plan. The Open Space Element includes the following land use policy to achieve the objectives of the Agriculture Land Use Designations:

“Permit low density residential and other compatible uses supportive of agricultural uses in agricultural areas. Non-agricultural development, including residential uses, shall be encouraged to occur in those areas least suitable for agricultural use.”

This policy is consistent with the approach taken in this document to preserve important agricultural resources on residential parcels where the resource would remain viable and to avoid the most valuable agricultural resources by locating non-agricultural uses in areas least suitable for agriculture.

Finally, the long-term preservation of agricultural land in San Diego County depends on numerous factors. One factor that significantly affects agricultural land use is the planned distribution of land use and density laid out in the General Plan. The County of San Diego is currently preparing an update to the General Plan. Although not yet completed, a major goal of the plan is to shift planned residential density from rural areas to town centers to facilitate the preservation of important biological and agricultural resources. Adoption of a new General Plan that includes shifts of density to urban centers and that includes allowances for flexibility in project design (i.e. clustering), would contribute significantly to the preservation of agricultural land uses in the long term.

The County is also currently developing a Farming Program to promote economically viable farming in San Diego County and to create land use policies and programs to support agriculture. When the elements of the Farming Program are developed, they will be referenced in these guidelines and may provide an additional means to mitigate impacts to agriculture.

Although avoidance and minimization of impacts to important agricultural resources as discussed in Section 5.1.1 is adequate to mitigate a project's impact to agricultural resources, it should be recognized that other approaches to preserve and protect agriculture are needed. The County's current efforts to update the General Plan and develop a Farming Program are key approaches to preserve and protect agriculture that are being actively pursued by the County.

### **5.1.2 Agricultural Conservation Easements**

A variety of agricultural mitigation mechanisms may be available to mitigate impacts to agriculture. One option includes the purchase of an offsite agricultural conservation easement. Recognizing that in many cases conversion of agricultural lands is unavoidable, an increasing number of lead agencies require acquisition of conservation

easements on other agricultural lands to mitigate the impact of conversion. The California DOC routinely states in its letters to lead agencies the following:

“One of the tools...is the purchase of agricultural conservation easements on lands of at least equal quantity and size as a partial compensation for the direct loss of agricultural land. We highlight this measure because of its growing acceptance and use by lead agencies as mitigation under the California Environmental Quality Act (CEQA).”

The American Farmland Trust defines a conservation easement as:

“a deed restriction landowners voluntarily place on their property to protect resources such as productive agricultural land, ground and surface water, wildlife habitat, historic sites or scenic views. They are used by landowners (“grantors”) to authorize a qualified conservation organization or public agency (“grantee”) to monitor and enforce the restrictions set forth in the agreement. Conservation easements are flexible documents tailored to each property and the needs of individual landowners. They may cover an entire parcel or portions of a property. The landowner usually works with the prospective grantee to decide which activities should be limited to protect specific resources. Agricultural conservation easements are designed to keep land available for farming.”

The County of San Diego recognizes the value of agricultural conservation easements for the preservation of agricultural land. As such, the County has initiated a major effort to develop the San Diego County Farming Program<sup>22</sup> that would support economically viable farming in San Diego County and create land use policies and programs that recognize the value of working farms to regional conservation efforts. As the components of this program are developed, a purchase of agricultural conservation easement program may be developed. Until such a program is approved and funded, any purchase of offsite agricultural conservation easements will have to be implemented on a project by project basis.

Although it is significantly more complex to implement agricultural conservation easements as mitigation on a project-by-project basis, it is included as a mitigation option that a project proponent may explore. To implement the purchase of an agricultural conservation easement for an individual project, the project proponent would first have to identify a landowner who is willing to sell an agricultural conservation easement of equal or greater value than the resource that is being impacted, as determined by the lead agency. The price of the conservation easement is usually based on the fair market value of the property minus its restricted value, as determined by a qualified appraiser. Rights that would be restricted and would be retained in the easement must be determined. To be accepted as a project mitigation measure the conservation easement would have to be identified, approved and secured prior to discretionary project approval.

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<sup>22</sup> More information about the San Diego County Farming Program can be found at [www.sdfarmingprogram.org](http://www.sdfarmingprogram.org).

## **5.2 Indirect Impacts**

When a project may have a potentially significant indirect impact to offsite agricultural operations or to onsite agricultural resources proposed for preservation or avoidance in accordance with Significance Guidelines 4.2.2.a through 4.2.2.d, the following project design elements should be considered to reduce the significance of identified impacts.

### **5.2.1 Project Design Elements**

Indirect impacts to agricultural resources can occur from inadequate consideration of the proposed project design as it relates to offsite agricultural operations or to onsite agricultural resources proposed for preservation or avoidance. A variety of potential conflicts can occur between agricultural and non-agricultural land uses. The site specific conditions of each project must be evaluated to identify the potential conflicts that could occur. Once these potential conflicts have been identified, project design elements should be considered that would eliminate the potential conflicts. Some examples of design elements that may reduce potentially significant indirect impacts to agricultural resources are identified below:

- Do not locate trails adjacent to accessible (e.g., not fenced) farm fields;
- Design project access to direct future occupants away from active farms and not towards active farms;
- Incorporate appropriate fencing or other barriers to minimize trespass;
- Orient project features that would be considered high-use areas (balconies, backyards, parks, etc.) away from active farms;
- Incorporate internal compatibility buffers to separate agricultural parcel(s) from non-agricultural land uses to ensure long term viability of the onsite agricultural parcel(s);
- Locate parks away from agricultural uses so the agricultural uses would not be adversely affected;
- Restrict uses incompatible with agriculture in areas adjacent to areas intended for agricultural preservation; and
- Incorporate appropriate land use transitions such as reduced density near adjacent farmland to decrease the number of residents that abut farms.

The selection and application of project design elements should be based on the identified potentially significant indirect impacts that could occur as a result of the proposed project. The above list of project design elements is a guide and is not a comprehensive list of measures that may be used to reduce potentially significant indirect impacts.

### **Compatibility Buffers**

Use of compatibility buffers between a proposed non-agricultural use and offsite agricultural operations or between proposed onsite non-agricultural uses and onsite preserved or avoided agricultural resources is the primary tool to increase compatibility between agricultural resources and non-agricultural uses. Compatibility buffers should

be located on the site being developed, and be provided/funded by the proponent of that development. The establishment of compatibility buffers, where necessary, works toward achieving safe and livable communities in the County of San Diego by affording land use transitions to reduce real or perceived conflicts between agricultural operations and new non-agricultural neighbors. Establishment of compatibility buffers within Agricultural Use Designations is consistent with existing policies in the Open Space Element of the General Plan to “foster compatibility between agricultural uses and non-agricultural uses” and to “[consider] the impacts of increased residential density on the agricultural area, as well as the location of the non-agricultural uses and their relationship to agriculturally designated areas.”

By designing projects with sensitivity to the ongoing surrounding agricultural operations and with sensitivity to the expectations of future homeowners, adverse impacts to agriculture at the agriculture urban interface can be minimized. Recognizing that no buffer width is scientifically proven to address the entire potential range of compatibility issues, buffers are, nonetheless, the best planning tool currently available to minimize interface conflicts. In a study of buffers in 16 counties and 6 cities, great variations were found among farmers and urban neighbors in the perceived effectiveness of different forms of buffers to limit specific negative impacts. Farmers generally found setbacks or open space buffers to be ineffective in dealing with trespass, vandalism, litter, theft, and dogs, while urban residents viewed them as generally effective in reducing impacts from agricultural chemical use, odor, and dust from farm operations (Handel, 1994). Given this research, where trespass is identified as a potential interface conflict, consideration should be given to providing barriers or fences, locating project access points away from farm fields, or providing no trespass signs where the project would most likely cause increased trespass.

The design and width of compatibility buffers should be based on the site specific conditions of topography, weather patterns, and the commodity uses in the area and should be related to the anticipated interface conflicts. For example, if offsite agricultural uses are separated by a topographic feature that provides an adequate buffer, additional project features to reduce a potential impact may not be required. If odor or chemical use was a potential interface issue and the project was located downwind from the project site, the potential for conflicts would be reduced, reducing requirements for site specific project design measures. The type of commodity production will affect the severity of potential interface conflicts because each agricultural commodity is managed differently (i.e. frequency of harvesting, truck traffic, chemical use, odors, etc.) and those management activities result in varying degrees of potential conflict. A specific required buffer width is not provided in these guidelines to allow for flexibility in project and buffer width design and to enable consideration of the variety of site specific conditions that would affect the adequacy of a compatibility buffer.

Compatibility buffers can be achieved in a variety of ways, including but not limited to, the following:

- Natural barriers created by landscape features such as waterways,

- topographic relief, or natural and/or planted vegetation;
- Physical barriers such as roads or walls;
- Multi-use barriers such as open space greenbelts, biological open space easements or stormwater detention facilities;
- Easements that restrict incompatible land uses such as habitable or accessory structures and swimming pools adjacent to offsite agriculture; and
- Incorporating land use transitions such as providing larger lots near farmland to increase long term compatibility.

### 5.2.2 Right to Farm Acts

State and local Right-to-Farm Acts have been implemented to establish the rights of agricultural activities to operate and not be considered a nuisance. State and local Right-to-Farm Acts, specifically, Civil Code §3482.5 (State Right to Farm Act) and the County Code of Regulatory Ordinances Section 64.401 (Agricultural Enterprises and Consumer Information Ordinance) may be referenced as mechanisms to help protect agriculture, but they may not be relied on to mitigate significant indirect impacts to agriculture.

According to the State Right to Farm Act, if a commercial agricultural use operates according to proper and accepted customs and standards, existed in a location for three years and was not a nuisance when it began, the agricultural use shall not become a private or public nuisance due to any changed condition in the locality. Moreover, the Right to Farm Act does not prohibit new neighbors from complaining about farm practices, filing complaints with regulatory authorities regarding agricultural practices, or hiring lawyers to challenge the rights of agricultural operators. Therefore, although the principle of the “Right to Farm Act” is that no agricultural activity shall be deemed a nuisance if it existed there for more than three years and was not a nuisance at the time it began, such legislation has had minimal effect in reducing the actual conflicts that occur at the agriculture urban edge (Wacker et. al, 2001).

In spite of right to farm laws, complaints and/or legal challenges to agricultural operations can reduce the viability of agricultural operations due to a variety of economic impacts to farmers that result from nuisance complaints. Farmers often respond to neighbor complaints by upgrading farm operations to eliminate nuisances or by abandoning use of portions of farm fields. Often, farm operation upgrades resulting from neighbor complaints have no benefit to the operation itself and are simply economic impacts that the farmer must bear as a result of new neighbors.

Therefore, while the Right to Farm Act and the County Consumer Information Ordinance may be referenced in a discussion of existing regulation that protects the rights of agricultural operators, reliance on these Right to Farm laws alone in addressing the significance of indirect impacts is not adequate to reduce an identified adverse indirect effects to agricultural resources.

### **5.3 Cumulative Impacts**

When a project may have a potentially significant cumulative impact to agricultural resources, additional agricultural preservation or offsite purchase of an agricultural conservation easement beyond a 1:1 preservation ratio may be required to mitigate for the cumulative loss of agricultural resources. The adequacy of mitigation for significant cumulative impacts will need to be determined on a case by case basis taking into consideration the value and extent of the resources that would be impacted and the mitigations proposed.

## **APPENDIX C**

### **LAFCO Discussion**

This project will require approval from LAFCO because it will involve an extension of the boundaries of the Rainbow Municipal Water District. LAFCO's throughout the state are required to consider how spheres of influence or changes of local governmental organization could affect open space and prime agricultural lands. Commissions are directed to guide development away from prime agricultural lands—unless that action would not promote the planned, orderly and efficient development of an area—and to encourage development of existing vacant or non-prime agricultural lands within a jurisdiction before approving any proposal that would allow development of open-space lands outside of an agency's boundary.

In response to this requirement, the San Diego LAFCO has adopted Legislative Policy L-101 which states in part that the San Diego LAFCO is to

“Discourage proposals that would convert prime agricultural or open space lands to other uses unless such an action would not promote the planned, orderly, efficient development of an area or the affected jurisdiction has identified all prime agricultural lands within its sphere of influence and adopted measures that would effectively preserve prime agricultural land for agricultural use.”

Prime Agricultural Land has been defined as

“...an area of land, whether a single parcel or contiguous parcels, that has not been developed for a use other than an agricultural use and that meets any of the following qualifications:

- (a) Land that qualifies, if irrigated, for rating as class I or class II in the USDA Natural Resources Conservation Service land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible.
- (b) Land that qualifies for rating 80 through 100 Storie Index Rating.
- (c) Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the Nation Range and Pasture Handbook, Revision 1, December 2003.
- (d) Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars (\$400) per acre.

(e) Land that has returned from the production of unprocessed agricultural plant products an annual gross value on not less than four hundred (\$400) per acre for three of the previous five calendar years.”

1. There is a General Plan Amendment filed on this property which will be acted on concurrently with the remainder of the project, and would provide for a Specific Plan Designation at a density of 2.33 dwelling units per acre. If the Board of Supervisors does not approve the General Plan Amendment, the project will be denied or have to be revised.

It is questionable if this land falls under the LAFCO definition of prime agricultural land. First, the only area that would meet any of the criteria set out is that of the soil type VaA (Visalia sandy loam, 0 to 2 percent slopes), which has a Storie Rating in excess of 80. However this soil occupies is found on land which has been developed as a horse ranch and would not qualify as a prime soil because it is on land developed as a non-agricultural use.

Below is a discussion of the 5 criteria, any one of which will indicate prime soil.

a. There is no imported water on this site for irrigation, and the well water is limited in quality. The County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements--Agricultural Resources pages 21-22, indicate that well water with a TDS level in excess of 600 mg/L is a water quality limitation for agriculture. Well tests have been included in Appendix D and indicate TDS levels in excess of 600 mg/L. Therefore, irrigation is not feasible and this property does not meet this criterion

b. Only one soil has a Storie Index Rating of 80-100, which is VaA as mentioned above. However, this soil is found on land, which has been developed as a horse ranch and would not qualify as a prime soil because it is on land developed as a non-agricultural use.

c. This land does not support livestock used for the production of food and fiber.

d. The groves that exist on-site have been losing money for many years and have not had a return of \$400/acre, See Table 3 below.

e. As stated above, the groves that exist on-site have been losing money for many years and have not had a return of \$400/acre. Table 3 below lists the earnings/losses for the agricultural operations on-site for the last 5 years.

Table 3 Expense/Earning Reports for Agricultural Activities

	2008	2009	2010	2011	2012
Grove Revenue	\$ 55,874.65	\$ 59,878.28	\$ 32,234.72	\$ 77,722.99	\$ 23,751.52
Expenses:					
B&G Nursery	40,415.00	29,722.50	25,254.00	29,760.00	33,240.00
A-1 Irrigation	2,067.24	2,115.48	1,283.84	1,416.54	5,096.39
Electric	22,142.48	21,268.48	18,910.41	16,174.79	18,759.61
R&M			2,973.66	14,091.33	1,527.05
Property Taxes	19,470.24	19,912.71	15,570.83	11,976.53	10,744.22
Labor allocation	10,379.24	9,498.50	9,129.07	9,504.54	9,688.05
	94,474.19	82,517.67	73,121.81	82,923.72	79,055.32
	\$ (38,599.54)	\$ (22,639.39)	\$ (40,887.09)	\$ (5,200.73)	\$ (55,303.80)

In addition, it has been determined by the County of San Diego's LARA (Local Agricultural Resource Assessment) Model that this site is not an important agricultural resource.

## **APPENDIX D**

### **Well Test Laboratory Results**

March 08, 2011



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6960 Flanders Drive  
San Diego, CA 92121  
TEL: (858) 558-6100  
FAX: (858) 558-8437

ELAP No.: 1838  
NELAP No.: 02107CA  
CSDLAC No.: 10196  
ORELAP No.: CA300003  
  
Workorder No.: 116693

RE: Warner Ranch, 9536-06-03

Attention: Matt Lesh/Elizabeth Hartung

Enclosed are the results for sample(s) received on March 04, 2011 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

A handwritten signature in dark ink, appearing to read "E. Rodriguez".

Eddie F. Rodriguez  
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.



**Advanced Technology Laboratories****ANALYTICAL RESULTS**

Print Date: 08-Mar-11

CLIENT: Geocon Consultants, Inc.

Client Sample ID: MW1

Lab Order: 116693

Collection Date: 3/4/2011 10:17:00 AM

Project: Warner Ranch, 9536-06-03

Matrix: GROUNDWATER

Lab ID: 116693-001A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**TOTAL FILTERABLE RESIDUE****SM2540C**

RunID: WETCHEM_110308D	QC Batch: 71352	PrepDate: 3/7/2011	Analyst: CBB		
Total Dissolved Solids (Residue, Filterable)	710	10	mg/L	1	3/7/2011 08:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank Holding	E	Value above quantitation range
	H	times for preparation or analysis exceeded Spike/Surrogate	ND	Not Detected at the Reporting Limit
	S	outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

Advanced Technology  
Laboratories

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

**Advanced Technology Laboratories****ANALYTICAL RESULTS**

Print Date: 08-Mar-11

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 116693  
**Project:** Warner Ranch, 9536-06-03  
**Lab ID:** 116693-002A

**Client Sample ID:** MW3  
**Collection Date:** 3/4/2011 11:20:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>TOTAL FILTERABLE RESIDUE</b>						
<b>SM2540C</b>						
RunID: WETCHEM_110308D	QC Batch: 71352				PrepDate: 3/7/2011	Analyst: CBB
Total Dissolved Solids (Residue, Filterable)	1500	18		mg/L	1	3/7/2011 08:00 PM

<b>Qualifiers:</b>	B	Analyte detected in the associated Method Blank Holding	E	Value above quantitation range
	H	times for preparation or analysis exceeded Spike/Surrogate	ND	Not Detected at the Reporting Limit
	S	outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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## Advanced Technology Laboratories

## ANALYTICAL RESULTS

Print Date: 08-Mar-11

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 116693  
**Project:** Warner Ranch, 9536-06-03  
**Lab ID:** 116693-003A

**Client Sample ID:** MW4  
**Collection Date:** 3/4/2011 12:50:00 PM  
**Matrix:** GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>TOTAL FILTERABLE RESIDUE</b>						
<b>SM2540C</b>						
RunID: WETCHEM_110308D	QC Batch: 71352				PrepDate: 3/7/2011	Analyst: CBB
Total Dissolved Solids (Residue, Filterable)	1000	12		mg/L	1	3/7/2011 08:00 PM

<b>Qualifiers:</b>	B	Analyte detected in the associated Method Blank Holding	E	Value above quantitation range
	H	times for preparation or analysis exceeded Spike/Surrogate	ND	Not Detected at the Reporting Limit
	S	outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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**Advanced Technology Laboratories****ANALYTICAL RESULTS**

Print Date: 08-Mar-11

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 116693  
**Project:** Warner Ranch, 9536-06-03  
**Lab ID:** 116693-004A

**Client Sample ID:** MW5  
**Collection Date:** 3/4/2011 12:25:00 PM  
**Matrix:** GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>TOTAL FILTERABLE RESIDUE</b>						
				<b>SM2540C</b>		
RunID: WETCHEM_110308D	QC Batch: 71352			PrepDate: 3/7/2011	Analyst: CBB	
Total Dissolved Solids (Residue, Filterable)	620	10		mg/L	1	3/7/2011 08:00 PM

<b>Qualifiers:</b>	B	Analyte detected in the associated Method Blank Holding	E	Value above quantitation range
	H	times for preparation or analysis exceeded Spike/Surrogate	ND	Not Detected at the Reporting Limit
	S	outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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## ANALYTICAL QC SUMMARY REPORT

CLIENT: Gecon Consultants, Inc.

Work Order: 116693

Project: Warner Ranch, 9536-06-03

TestCode: 160.1\_2540C\_W

Sample ID: 116693-001A-DUP	SampleType: DUP	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 3/7/2011	RunNo: 130778	SeqNo: 2128118
Client ID: MW1	Batch ID: 71362	TestNo: SM2540C		Analysis Date: 3/7/2011		
Analyte						
Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit
712.000		10				707.0
Total Dissolved Solids (Residue, Filtera					%RPD	RPDLimit
					0.705	10
Qual						

Sample ID: LCS-71362	SampleType: LCS	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 3/7/2011	RunNo: 130778	SeqNo: 2128122
Client ID: LCSW	Batch ID: 71362	TestNo: SM2540C		Analysis Date: 3/7/2011		
Analyte						
Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit
965.000		10	970.0	0	99.5	80
Total Dissolved Solids (Residue, Filtera						120
Qual						

Sample ID: MB-71362	SampleType: MBLK	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 3/7/2011	RunNo: 130778	SeqNo: 2128123
Client ID: PBW	Batch ID: 71362	TestNo: SM2540C		Analysis Date: 3/7/2011		
Analyte						
Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit
ND		10				
Total Dissolved Solids (Residue, Filtera						
Qual						

## Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range  
 R RPD outside accepted recovery limits  
 Calculations are based on raw values

H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference

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Pg 1 of 1



3275 Walnut Avenue  
Signal Hill, CA 90755  
(562) 989-4045 • Fax (562) 989-4040

### Method of Transport

Logged By: [Signature] Date: 3/4/11

Client ☐  
ATL ☒  
CA OverN ☐  
FEDEX ☐  
Other: ☐

### Sample Condition Upon Receipt

1. CHILLED ☒ Y ☒ N ☐ 4. SEALED ☐ Y ☐ N ☐  
2. HEADSPACE (VOA) ☐ Y ☐ N ☐ 5. # OF SPLS MATCH COC ☐ Y ☐ N ☐  
3. CONTAINER INTACT ☐ Y ☐ N ☐ 6. PRESERVED ☐ Y ☐ N ☐

Client: Geocon Inc	Address: 6900 Flanders Dr.	TEL: (858) 558-6900
Attn: Matt Lesh / Elizabeth Hartung	City San Diego State CA Zip Code 92121	FAX: ( )

Project Name: Warner Ranch	Project #: 9526-06-03	Sampler: Elizabeth Hartung	(Signature)
Relinquished by: (Signature and Printed Name)	Date: 3/4/11	Time: 15:05	Received by: (Signature and Printed Name)
Relinquished by: (Signature and Printed Name)	Date: 3/4/11	Time: 16:55	Received by: (Signature and Printed Name)
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)

hereby authorize ATL to perform the work indicated below:

Send Report To:

Bill To:

Special Instructions/Comments:

Project Mgr /Submitter: El Harting 3/4/11  
 Print Name Elizabet Hob Date  
 Signature

Attn:

Attn:

Co: same as  
Address above  
City \_\_\_\_\_ State \_\_\_\_\_

Co: Same as  
Address above  
City \_\_\_\_\_ State \_\_\_\_\_

### Sample/Records - Archival & Disposal

Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

**Storage Fees (applies when storage is requested):**

- Sample : \$2.00 / sample / mo (after 45 days)
- Records: \$1.00 / ATL workorder / mo (after 1 year)

Circle or Add  
Analysis(es)  
Requested /

SPECIFY APPROPRIATE  
MATRIX

QA/QC

RTNE ☐  
CT ☐

SWRCB ☐  
Logcode

OTHER \_\_\_\_\_

PRESERVATION

REMARKS

[illegible]

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A=	Overnight ≤ 24 hr
---------	----------------------

B=Emergency  
Next workday

C= Critical  
2 Workdays

**D** Urgent  
**3 Workdays**

E= Routine  
7 Workdays

Preservatives:

$$\begin{array}{l} \text{H}=\text{HCl} \quad \text{N}=\text{HNO}_3 \quad \text{S}=\text{H}_2\text{SO}_4 \quad \text{C}=\text{4}^\circ\text{C} \\ \text{Z}=\text{Zn}(\text{AC})_2 \quad \text{O}=\text{NaOH} \quad \text{T}=\text{Na}_2\text{S}_2\text{O}_3 \end{array}$$

