

CHAPTER 3.0 ENVIRONMENTAL EFFECTS FOUND NOT TO BE SIGNIFICANT

3.1 Effects Found Not Significant as Part of the DEIR Process

3.1.1 Agricultural Resources

An agricultural analysis for the TM 5223RPL³ Shadow Run Ranch project was conducted by TRS Consultants. ~~TRS may continue to provide agricultural analyses, for Shadow Run Ranch.~~ The resulting report, entitled “Agricultural Conversion Analysis for Shadow Run Ranch TM 5223RPL3,” is dated December 2013 is provided as Appendix M, in Volume III, of the Technical Appendices, to this DEIR.

3.1.1.1 Existing Conditions

Regional Context

Topography in the vicinity ranges from steep rugged terrain of the surrounding mountains descending to more gently sloping areas around the San Luis Rey River Valley. The elevation of Pauma Valley is approximately 800 feet above mean sea level (AMSL). The project site ranges from less than 730 feet AMSL in the south to more than 1620 feet AMSL at the project’s northeast boundary. Pauma’s climate is Pacific Ocean-dominated with an average annual rainfall of 13.5 inches and average temperature of 64 degrees Fahrenheit (°F). Soil types in the area include rocky and stony sandy loams, stony land, and sandy loam.

Pauma Valley land uses consist primarily of agricultural operations, undeveloped land, and scattered rural residential use. The community of Pauma Valley is approximately two miles southeast of the project, along State Route 76/Pala Road (SR76). A small market, community center, and casino, among other interspersed small businesses, are located along this route in Pauma Valley. The community of Pauma is served by the Yuima Municipal Water District (a groundwater-dependant district) and by private wells.

Indian Reservations and agricultural uses are located throughout the area. These include the Pauma, Rincon, Pala, and La Jolla Indian Reservations. Privately owned agricultural operations, single family dwellings, minor commercial uses, undeveloped property, and Williamson Act Contract lands are also located throughout the vicinity. Agricultural uses in the region include citrus and avocado orchards, range lands, and a large nursery operation. The relationship of the project site to surrounding uses is shown in Figure 1-4, “Land Use Map.”

The California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP) publishes maps and statistical data for analyzing impacts on California’s agricultural resources. Agricultural land is rated according to

soil quality and irrigation status. The best quality lands are called Prime Farmland and Farmland of Statewide Importance; the remaining categories are Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, and Other Land. The criteria for meeting the soil quality designations are defined by the Natural Resources Conservation Service (NCRS) and are unique to each county. Farmland Mapping & Monitoring Program (FMMP) designations in the project vicinity include Farmland of Statewide Importance, Farmland of Local Importance, Unique Farmland, Urban and Built Up Land, and Other Land.

Onsite Agricultural Resources

The property has supported agricultural operations since the 1940s. Avocados and oranges account for the majority of the crops currently on the site. Other crops are lemons, grapefruit, persimmons, and pomegranites.

Soils Types and Quality

The following four soil types are located on the project site:

Soboba stony loamy sand (SsE), 9 to 30 percent slopes

This soil type has an LCC of VIe7(20), indicating that fertility is low to medium, and that this type of soil is best suited for range or recreation. Approximately 58 percent of the site consists of this soil type and is currently used for avocado and orange trees. Runoff is medium to rapid and erosion hazards are moderate to high. This soil type has severe limitations for crops, and requiring careful management if used for crops.

Cieneba-Fallbrook rocky sandy loam (CnG2), 30 to 65 percent slopes, eroded

Two categories of CnG2 exist onsite: the Cieneba-Fallbrook series, and Rock Outcrop series. The Cieneba-Fallbrook series have an LCC of VIe-7(19), indicating a high to low fertility and suitability mostly for range. However, such crops as citrus and avocados may be established on CnG2, Cieneba-Fallbrook Series. Runoff for this series is slow to rapid and erosion hazard is slight to high. This soil is not suited for cultivated crops but can be used for pasture and range.

The second category onsite is the Rock Outcrop series, which has an LCC of VIIIs-1(19), which is not suited to farming and is better used for wildlife habitat, recreational facilities, and watershed. Approximately eleven percent of the site consists of this soil type and is currently undeveloped. Runoff for this series is rapid, and the erosion hazard is high. This soil type has no suitability for any type of farming.

Stony Land (SvE)

The LCC for this soil type is VIIIs-1(19, 20). This unit is predominantly rock outcrop and has no value for farming. Runoff is rapid to very rapid, and erosion hazards are

moderate to very high. This soil is suitable for wildlife habitat, recreational facilities, and watershed. Approximately 17 percent of the site consists of this soil type, along Frey Creek on the western boundary. This soil type has no suitability for any type of farming.

Cieneba-Fallbrook rocky sandy loam (CnE2), 9 to 30 percent slopes, eroded

Two categories of CnE2 exist onsite: the Cieneba-Fallbrook series and the Rock Outcrop series. The Cieneba-Fallbrook have an LCC of VIe-7(19), indicating a high to low fertility and suitability mostly for range. However, crops such as citrus and avocados may be established on CnE2, Cieneba-Fallbrook Series soils. Runoff for this series is slow to rapid and erosion hazard is slight to high. This soil type has no suitability for crops, but can be used for pasture and range.

The second category onsite is the Rock Outcrop series, which has an LCC of VIIIs-1(19), which is not suited to farming and is used for wildlife habitat, recreational facilities, and watershed. Approximately 14 percent of the site consists of this soil type and is currently undeveloped. Runoff for this series is rapid, and the erosion hazard is high. This soil type is unsuitable for any type of farming.

FMMP Farmland Designations

The majority of the site is designated Unique Farmland, which is a soil type used for producing the state's major high economic value crops on land not qualifying for Prime or Statewide Importance. This type of land is usually irrigated, but may include non-irrigated fruits and vegetables found in some climatic zones in California. This farmland on site supports avocado groves.

A portion of the site is designated Other Land, which is land that does not meet the criteria of any other category and includes the reservoir onsite, undeveloped areas with rocky steep slopes to the north, and the riparian area along Frey Creek along the western boundary. The site does not contain any soils classified as Prime Farmland or Farmland of Statewide Importance. Figure 3-1-1A, "Site on FMMP Map," shows the site superimposed on the FMMP map for the area. Figure 3-1-1B provides the legend for the map.

Historical Agricultural Production

Historical aerial photography shows that the site has been used for agricultural purposes since the 1940s, when the agricultural operation was created just east of Frey Creek by Adolph Schoepe. By the early 1960s, the reservoir onsite had been created and the site has continued to expand since, with primarily oranges, avocado, lemons, and grapefruit. In recent years, persimmons have been added as a crop.

Climate

Temperatures in Pauma range from 80 degrees Fahrenheit (° F) during the summer, and 48°F during the winter. The warmest month of the year is August, when temperatures reach an average maximum of 94°F, while the coldest month of the year is January with an average minimum temperature of 32°F. The annual average precipitation in Pauma is 13.5 inches. Rainfall is distributed from fall through spring, with dry summers. The wettest month of the year is February, with an average rainfall of 3.14 inches. Average humidity for the area is approximately 70 percent.

Sunset Zones are climate zones which are categorized from having the coldest winters in the west in Zone 1, to the warmer maritime influence in Zone 24. The site is located within Zone 21, which is a transitional climate that occupies a series of valleys partially screened from maritime influences by low mountains to the west, and limited by the western extension of the Peninsular Range to the east. This zone is good for citrus and is the mildest zone that gets adequate winter chilling for some plants. Low temperatures range from 23°F to 36°F, rarely dropping below 0°F. Transitional climates allow year-round production.

Water Resources

Well water is currently used for irrigation of agricultural operations. See Figure 1-3 for well locations onsite. Water is pumped to an on-site reservoir with a capacity of approximately 41 acre-feet, from which it is distributed to on-site groves.

Approximately three-quarters of the site are composed of alluvial and sedimentary aquifers. These aquifers have significant storage capacity and are typically found within intermountain valleys, composed of either consolidated or unconsolidated gravel, sand, silt, and clay. Although most of these aquifers have high water storage capacity, some have relatively thin saturated thickness and therefore limited storage. Alluvial sedimentary aquifers can be underlain by fractured rock aquifers, which could potentially provide additional storage. The underlying aquifer in the northern portion of the site is composed of fractured crystalline rock, which typically yields low volumes and production of water compared to other aquifer types.

Williamson Act Contracts and Agricultural Preserves

The site is not under a Williamson Act Contract and is not within an Agricultural Preserve.

Offsite Agricultural Resources

A Williamson Act Contract property is located within the one-quarter mile radius Zone of Influence (ZOI). This area is located to the northwest of the Proposed Project, and consists of Farmland of Statewide Importance and Local Importance

designations and supports mostly citrus groves, avocados, persimmons, and single family residences.

Zoning and General Plan Designations

The Proposed Project is located in agricultural zone A70 (4) Limited Agricultural Use, which allows a minimum lot size of four acres per the County Zoning Ordinance. This zone is intended to create and preserve areas intended primarily for agricultural crop production while allowing single-family residential uses. Based on the site, designation, zoning, and slope, 52 dwelling units would be allowed at maximum on the 248-acre site. The project proposes 44 dwelling units, 8 less than allowed.

The General Plan Land Use Designation is (19) Intensive Agriculture, which is intended to promote a variety of agricultural uses including minor commercial, industrial, and public facility uses appropriate to agricultural operations or in support of the agricultural population. This designation permits two-, four-, and eight-acre parcels under specified conditions.

The project is within the Semi-Rural Residential (SR-10) Land Use Designation of the current General Plan, with a minimum lot size of 40 acres (RL-40) density of one dwelling per 10 acres. Zoning is A 70 (4 acres). The project is pipelined under the rules adopted by the Board of Supervisors when the current general plan was being formulated. On the previously adopted General Plan, under which the project is pipelined, the designation Estate Development Area (EDA) applies. The EDA allows for combined agricultural and low density residential uses, where parcel sizes of two to twenty acres apply. The 44 lots will be clustered and a minimum of two acres in size. Therefore, the lot design is consistent with this category. No development is proposed in areas with slopes greater than or equal to 25 percent. The project proposes three open space lots that together preserve approximately 138.39 acres (56 percent of the total project acreage).

3.1.1.2 Analysis of Project Effects and Determination as to Significance

Guidelines for the Determination of Significance

Guidelines are from the *County of San Diego Guidelines for the Determination of Significance Report Format and Content Requirements - Agricultural Resources*, March 19, 2007, and are the basis for evaluating impacts to important onsite agricultural resources in San Diego County. An affirmative response to, or confirmation of the following guidelines will generally be considered a significant impact to agricultural resources as a result of proposed project implementation, in the absence of evidence to the contrary.

1. 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 agricultural use on the site.
2. Proposes a non-agricultural land use within one-quarter mile of an active agricultural operation or land under a Williamson Act contract and as a result of the project, land use conflicts between agricultural operations or Williamson Act contract land and the project are likely to occur and could result in conversion of agricultural resources to non-agricultural use.
3. Propose a school, church, daycare or other use that involves a concentration of people at certain times within one mile of an agricultural operation or land under Williamson Act contract and as a result of the project, land use conflicts between agricultural operations or Williamson Act contract land and the project are likely to occur and could result in conversion of agricultural resources to non-agricultural use.
4. Involves other changes to the existing environment, which due to their location or nature, could result in the conversion of off-site agricultural resources to non-agricultural use or could adversely impact the viability on land under a Williamson Act contract.
5. The project conflicts with a Williamson Act contract or the provisions of the California Land Conservation Act of 1965 (Williamson Act).

Analysis of Project Effects

Guideline 1: 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 agricultural use on the site.

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.

In terms of required factors for the LARA Model, the project site was rated as high for climate, moderate for water, and low for soils (Appendix M, Table 1). In terms of complementary factors, it was rated high for surrounding land use, land use

consistency and slope. Since one of the required factors (soils) is rated low, the site is determined to not be an important agricultural resource. Since the project site is determined not be an important agricultural resource, it does not exceed Guideline 1 and impacts are less than significant. No mitigation is required.

Guideline 2: Proposes a non-agricultural land use within one-quarter mile of an active agricultural operation or land under a Williamson Act contract and as a result of the project, land use conflicts between agricultural operations or Williamson Act contract land and the project are likely to occur and could result in conversion of agricultural resources to non-agricultural use.

Mixed rural residential and agricultural uses surround the site. There is one Williamson Act Contract property located within one-quarter mile of the Proposed Project that grows citrus and avocados. It is located west and north of Frey Creek and shares a boundary with the open space portion of the project.

The *County of San Diego Guidelines for Determining Significance – Agricultural Resources* states that 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.

Such is the case with the Proposed Project, which proposes 44 residential lots as well as a 39.12-acre area for preservation within an agricultural open space easement (Lot 45) as well as a biological open space (Lot 46) and a recreation area (Lot 47). The project has been designed to retain 39.12 acres of existing agriculture in open space to preserve the area's community character and to comply with the Pala/Pauma Subregional Plan. Existing agriculture within the proposed development area will be retained to the extent possible, and future individual lot owners may continue the agricultural use if they choose to do so.

The 39.1-acre agricultural lot will be owned and operated by the applicant or subsequent homeowners association (HOA). The agricultural lot will be protected by an easement that will allow for the full range of activities necessary to maintain the agricultural resource. The easement will prohibit activities not related to agricultural stewardship, such as trails or non-agricultural buildings.

Resources will be professionally managed. The position will require someone experienced in agricultural management, with a minimum of five years of experience required. The agricultural manager responsibilities will include monitoring the agricultural preserve for trespassing, theft, or other indirect effects, and will implement a fencing and signage program should the need for such protection be deemed necessary. Lot 45 is located in the north central section of the site. This location was chosen for preservation of agriculture because:

- It has immediate access to Adams Drive and SR-76. Eastern areas of the site are more isolated.
- Agriculture is established in this area and is very productive.
- The site has been planted with new persimmon and citrus trees, providing a better long term production resource than older parts of the grove.
- Soils types (Soboba stony loamy sand 9-30% slopes or SsE) are generally uniform across the site, so the chosen location can take advantage of the beneficial soils on the site.
- The FMMP classification of the site as Unique Farmland is consistent east to west, so that the eastern area is able to take full advantage of the best farmland on the site.
- Irrigation is available throughout the site.
- Fencing is proposed along the boundary with the recreation lot to discourage intrusions and theft.

Grading on each proposed residential lot will be restricted to pads and roads, and the existing grove on the remainder of each lot, estimated to be a minimum of one acre, will be maintained. As a result, approximately 110 acres of the existing 154 acres of grove (approximately 71 percent) will not be disturbed by project construction. Further, 39.12 acres of the 110 acres of agricultural, specifically groves, will be placed within an agricultural open space easement. As discussed in the Agricultural Conversion Analysis, this lack of disturbance preserves the potential for the future lot owners to continue agricultural production for the long-term, by using the lot for both residential and agricultural uses. Each lot will be provided with a dual water system allowing use of non-potable groundwater for irrigation purposes. Professional agricultural management will also be available.

The project also incorporates restrictions on use of pesticides. Specifically the project will adhere to State law and County of San Diego ordinances regulating the use of pesticides, and will follow Department of Agriculture Weights and Measures policies and procedures for handling, notification, disposal, record keeping and reporting related to hazardous chemical use. The project will not use aerial spraying in grove maintenance activities. The project will comply with the County ordinance requiring statements to prospective buyers as related to the prior existence of agriculture in the area. To ensure prospective residents are aware of the agricultural nature of the subdivision, the following notice will be provided:

The owner shall notify each prospective purchaser about potential agricultural operational issues that may occur on surrounding property and onsite in writing as follows:

Agricultural operations are located throughout the unincorporated area of San Diego County and are often conducted on relatively small parcels. The subject property is also located in the unincorporated area and, as such, is likely to be located near an agricultural enterprise, activity, operation, or facility or appurtenances thereof (collectively, "agricultural use").

Occupants of the property to be purchased may be exposed to inconveniences, irritations or discomforts arising from the agricultural use, including but not limited to noise, odors, fumes, dust, smoke, insects, rodents, the operation of machinery of any kind (including aircraft) during any 24 hour period, the storage and disposal of manure, and the application by spraying or other means of agricultural chemicals, such as pesticides and fertilizers. Purchasers of the property may be required to accept such inconveniences, irritations and discomforts, unless the agricultural use constitutes a public or private nuisance under the provisions of Section 3482.5 of the Civil Code or Section 63.403 of the San Diego County Code.

The agricultural use may be altered or expanded in the future.

Further, a project design consideration to require submission of an application for Final Public Report to the State of California, Department of Real Estate which will completely disclose all hazards and unusual conditions in or near this subdivision related to surrounding agricultural uses will be written as follows:

The subdivider shall provide evidence satisfactory to the Director of Planning & Development Services that an application for a Final Public Report has been submitted to the State of California, Department of Real Estate that discloses that there will be hazards or unusual conditions in or near this subdivision related to surrounding agricultural uses. The application must fully disclose to potential purchasers of the property all inconveniences and irritations arising from agricultural operations including, but not limited to the following: cultivation, plowing, spraying, pruning, harvesting, drying, crop protection from the elements or depredation which generates dust, smoke, noise, insects, rodents, and odor, and the use of agricultural chemicals, including but not limited to herbicides, insecticides, fungicides, rodenticides, and fertilizers.

Given the project will conduct ongoing agricultural operations on the proposed 39.12 acre agricultural preserve lot; provides opportunity for continued agriculture on the proposed residential lots; will employ a professional agricultural manager; and, incorporates additional design measures to reduce agricultural nuisance, conflicts with nearby agricultural operations and the Williamson Act contract land are not likely to occur and will not result in conversion of agricultural resources to non-agricultural use. Guideline 2 is not exceeded, impacts are less than significant, and no mitigation is required.

Guideline 3: Propose a school, church, daycare or other use that involves a concentration of people at certain times within one mile of an agricultural operation or land under Williamson Act contract and as a result of the project, land use conflicts between agricultural operations or Williamson Act contract land and the project are likely to occur and could result in conversion of agricultural resources to non-agricultural use.

The project does not propose a school, church, day care or other use that involves a concentration of people at certain times. The project is an estate residential development project. Therefore, Guideline 3 is not exceeded and impacts are less than significant. No mitigation is required.

Guideline 4: Involves other changes to the existing environment, which due to their location or nature, could result in the conversion of off-site agricultural resources to non-agricultural use or could adversely impact the viability on land under a Williamson Act contract.

The project does not propose other changes that would result in the conversion of agricultural uses surrounding the site. The project encourages ongoing active agricultural operations by preserving 39.12 acres within an agricultural open space easement (Lot 45) which will be professionally managed. The project also encourages through creation of estate-sized lots that can accommodate agriculture. This is consistent with existing use patterns surrounding the site, where small lots with an agricultural component are common. According to County policy, agriculture is compatible with residential lots of this size.

Potential agricultural land use conflicts are minimized because of the similarity of use between the project and surrounding areas. Residents with common uses tend to have a mutual understanding of issues that arise from the uses they have in common.

A Williamson Act property is located adjacent to the site on the northwest. This property will be buffered from the project by open space that will protect Frey Creek. Access to the creek area will be limited to the maintenance of wells located there. This type of activity has been ongoing for many years with no detrimental effect on the adjoining property. Additionally the grove agriculture that will be preserved throughout the project site is similar to the agricultural use on the adjoining property. Conflicts over use will therefore be minimized due to the similarity of operations such as grove maintenance, picking, and irrigation. Further, the project will incorporate noticing procedures of grove operations that comply with County of San Diego ordinances as related to pesticide use. Restrictions on use of pesticide application such as aerial spraying will be implemented. Prospective buyers will be advised as to the prior existence of agriculture in the area in accordance with County Ordinance §63.401. Because of the general compatibility of proposed and existing

uses, and compliance with regulatory requirements, impacts are not significant. Guideline 4 is not exceeded and impacts are less than significant. No mitigation is required.

Guideline 5: The project conflicts with a Williamson Act contract or the provisions of the California Land Conservation Act of 1965 (Williamson Act).

There are no Williamson Act contracts on the project site. Additionally, as discussed under Guideline 2, the project will not result in an impact to the off-site Williamson Act area located northwest of the project site. Guideline 5 is not exceeded, impacts are less than significant, and no mitigation is required.

3.1.1.3 Cumulative Impact Analysis

Cumulative impacts are those caused by the additive effects of other projects 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, present, and probable future projects may cause the significant loss or degradation of agricultural resources.

The guidelines for determining the significance of cumulative impacts are based on the same guidelines used to determine the significance of project level impacts (Section 3.1.2.2) with the exception that the analysis considers the significance of the cumulative impact of the individual project in combination with the impacts caused by other projects in the cumulative study area.

The cumulative projects study area consists of approximately 41,600 acres extending over a 65 square mile area and was chosen based on a combination of topography and its location within the Pala/Pauma Subregional Planning Area. The Pala Mountain range forms the western and southwestern boundaries while the mountainous terrain associated with Mount Palomar and the Cleveland National Forest forms the northern cumulative boundary. The community of Pauma Valley spans to the east and south of the project and the community of Pala is located to the west. The study area produced a total of ~~19~~28 projects that needed to be examined.

A two-tiered process was used to analyze projects. Initially all projects were screened using criteria in the *County of San Diego Guidelines for Determining Significance - Agricultural Resources*. Cumulative projects that do not substantially impair the viability of surrounding agriculture are discussed first. Then, the remaining projects were researched using available County records to determine the extent of agricultural impacts. Both direct and indirect impacts were reviewed.

Projects That Would Not Substantially Impair Ongoing Viability of Agriculture

Based upon a review of County records, 42-15 of the 49 28 projects were determined to not substantially impair the ongoing viability of agricultural use. These projects may or may not have existing agriculture and/or Prime or Statewide Importance soils onsite. Examples of these projects include minor expansions or alterations of an existing use, single family residence grading permits, boundary adjustments and Certificates of Compliance, agricultural intensification, accessory or auxiliary uses such as wireless telecommunication facilities and drainage facilities, road improvements 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. Projects that have been withdrawn are also included in this list of projects.

Minor Use Permits 06-076 and 01-114 are wireless facilities that would not substantially impair the ongoing viability of the surrounding sites for agricultural use because they are accessory uses that cover a very small area. Minor Use Permits 81-037, 67-092, 63-162, and 65-034 do not have existing agricultural activities onsite, contain no soils of importance, and are minor expansions of an existing use. Tentative Parcel Map (TPM) 20913 is a lot split of five acres into four lots. There are no existing agricultural uses or soils of importance on the site. Tentative Map (TM) 4944, previously a plant nursery, was completely cleared of all vegetation and has no soils of importance onsite. TPMs 20896 and 20959, and Permits 07-006 and 05-009 have been withdrawn. A negative finding was made for MUP 08-045, Peterman Cell Site. GPA 06-009, Warner Ranch, has been withdrawn. TM 5545, Pauma Estates, had no agricultural impacts and preserves approximately 7.0 acres of sensitive land.

Projects Analyzed With Existing Agriculture, Prime or Statewide Importance Soils Onsite

There are seven projects that have existing agriculture or have Prime or Statewide Importance soils onsite that were analyzed for cumulative direct impacts. Other projects are large in scope. These thirteen projects are discussed below. The Pala/Pauma Subregional Plan area is primarily an agricultural community. Projects in the vicinity appear to be mostly agricultural operation expansions and rural residential developments retaining the majority of existing groves, thereby resulting in a significant area of groves being retained for continued production.

The focus of the remainder of the analysis is on projects with direct and indirect impacts to agricultural resources. They are detailed in Table 1-1 and are located on a cumulative impact map, Figure 1-6, "Cumulative Projects in Study Area." ~~for~~ For ease of reference, ~~p~~ Projects are shown on a FMMP map on Figure 3-1-2.

Club Estates (TM 5499, location 6 on Figures 1-6 and 3-1-2) is a subdivision of 48.31 acres into 32 residential parcels. The subdivision has Prime and Statewide Importance Farmland with active citrus grove onsite. The project has been approved and County of San Diego determined that there are no significant cumulative agricultural impacts resulting from this project.

Oak Tree Ranch (TM 5540, location 4) proposes 24 condominiums and has Statewide Importance Farmland onsite and truck crops are grown on the site. There are no important soils noted on the FMMP map and no significant agriculture impacts.

La Cuesta De Pauma (TM 5263, location 5) consists of 274 acres divided into 51 residential lots and is made up mostly of Unique Farmland with avocado and citrus groves. The County of San Diego has determined that there are no significant cumulative agricultural impacts as a result of this project.

McNally Road (TPM 21004, location 1) consists of 58 acres and has been approved for a 5-parcel subdivision within an existing avocado and citrus grove. Agriculture will be retained on each lot and there are no significant cumulative agricultural impacts noted.

Nextel (MUP 05-014, location 2) was approved for a wireless communication facility within an existing agricultural operation of truck crops. The facility, less than one acre in size, is located on Prime Farmland, however, agriculture is to continue on the site and there are no significant cumulative agricultural impacts noted.

Pauma Valley Packing Company (MUP 99-001, location 15) is a fruit processing and packing agricultural operation that facilitates other agricultural operations. Therefore, no cumulative impacts to agriculture will occur.

T-Y Nursery Yard (AD 05-065, location 3) is an approved permit to clear approximately eleven acres of vegetation onsite for the addition of container plants to the existing nursery. T-Y Nursery supports and expands agricultural operations; therefore, there are no significant cumulative agricultural impacts.

Sol Orchard (AP 11-037, location 21) was approved as a 43 acre solar generating facility, and encompasses some Farmland of Statewide Importance. Agriculture will be retained around solar panels.

Orange Grove Project (AP 07-009, location 22) is an 8.5-acre electric generating plant on 41 acres. The project may have impacted a former citrus grove but was exempt from CEQA.

Campus Park (GPA 03-004, location 24) consists of approximately 420 acres proposed on undeveloped land and non-commercial pasture land. No impacts to agriculture were noted.

Campus Park West (GPA 05-003, location 25) consists of 118.5 acres that would include residential, office, and commercial uses. It would impact 8.8 acres of agriculture.

Palomar College (GPA 09-006, location 25) was studied for agricultural resources but had no significant impacts.

Meadowwood (GPA 04-002, location 26) is a 389.5-acre project proposing 255 single family residences. It would impact 165.3 acres of grazing land. The project preserves 45.1 acres in a dedicated agricultural preserve.

~~Warner Ranch (GPA 06-009, location 27) consists of 513 acres and proposes single family and multi-family residential, parks, and open space, as well as a fire station. The project has the potential to impact 77.3 acres of agricultural land. Agricultural land is protected in open space easements.~~

In summary, a total of ~~337.4~~230.6 acres will be directly impacted by ~~four~~seven of the ~~twelve~~thirteen projects examined in detail. Six had no direct or indirect cumulative agricultural impacts (TM 5499, TM 5540, TM 5263, TPM 21004, MUP 99-001, AD 05-065). Agriculture and/or agricultural-facilitating operations are expected to continue on six of the projects (TPM 21004, MUP 05-014, MUP 99-001, AD 05-065, GPA 04-002, and GPA 06-009).

The preservation of areas adequate for agriculture is an important aspect of farming in San Diego County because the majority (68%) of San Diego County farms are between one and nine acres in size. The project's General Plan category (Estate Development Area) and designation (19) allows a minimum parcel size of two acres, wherein agriculture can be combined with low density residential uses. This is important for continued agriculture because this allows the establishment of residences while retaining agricultural operations.

The project in combination with other anticipated development in the study area does not result in cumulatively significant agricultural impacts because cumulative projects have avoided or minimized agricultural impacts, retained agricultural uses, or mitigated impacts.

None of the cumulative projects analyzed result in incompatible development that would increase agriculture interface conflicts and associated agricultural viability. Eight project (TPM 21004, MUP 05-014, AP 05-064, TM 5499, MUP 99-001, AP 11-037, GPA 04-002, and GPA 06-009) preserve an agricultural component that will be compatible with surrounding agriculture. Projects with residential components will be required to notify potential residents about existing agriculture, per County Ordinance §63.401 detailed above.

The project, in combination with other anticipated development in the study area, does not result in cumulatively significant agricultural impacts because cumulative projects have avoided or minimized agricultural impacts, retained agricultural uses, or mitigated impacts. The cumulative projects do not result in incompatible development because they remain consistent with surrounding uses and will notice any new residents about the existence of agriculture in the area. Cumulative impacts to agriculture are less than significant and no mitigation is necessary.

3.1.1.4 Conclusion

The project was evaluated by a consultant approved to complete work on the Proposed Project's agricultural resources. The project has been designed to retain 39.1 acres (25 percent) of existing agriculture in open space to preserve the surrounding community character and comply with the Pala Community Plan. Existing agriculture within the development area will be retained to the extent possible, and future individual lot owners may continue the agricultural use if they desire to do so. The agricultural open space will be professionally managed through a contract with the owner of the agricultural open space.

The project is not a significant agricultural resource according to the LARA Model. The project does not substantially impair the ongoing viability of the site for agricultural use. Proposed parcel sizes ranging from 2.04 to 7.35 acres are adequate to support continuing agricultural operations onsite. These parcel sizes are compatible with the mixed-use residential and agricultural uses that surround the project, which exhibit a pattern of successful agricultural operations on small parcels. The Proposed Project is consistent with General Plan and zoning designations, and is compatible with the rural residential and agricultural policies of the Pala/Pauma Subregional Plan.

No significant cumulative impacts will result from the Proposed Project in combination with other planned development in the 41,600-acre study area. Project design features ensure the continued viability of agricultural operations onsite. Planned projects throughout the area either preserve existing agricultural uses or propose parcel sizes that ensure the continuing viability of agricultural uses. The Proposed Project does not result in significant agricultural impacts individually or cumulatively and no mitigation is required.

3.1.2 Climate Change Analysis

This section of the environmental impact report (EIR) evaluates the significance of the Proposed Project greenhouse gas (GHG) emissions relative to relevant planning and policy benchmarks and the County of San Diego Climate Action Plan (CAP).

A climate change study was prepared for the proposed project for informational purposes by Jeremy Loudon of Ldn Consulting, who is on the County's list of qualified consultants. The resulting informational report is, entitled "Global Climate Change Shadow Run Ranch Residential Development," dated May 11, 2014~~February 6, 2017~~, and herein referred to as the "informational GHG report." The informational GHG report is provided as Appendix N to this DEIR. A Climate Change Review with Final Climate Action Plan Construction Review checklist dated May 5, 2018 was prepared by the County and is included as an Attachment to Appendix N.

3.1.2.1 Existing Conditions

Climate Change – Introduction

Global Climate Change (GCC) is defined as the change in average meteorological conditions on the Earth with respect to temperature, precipitation, and storms.

Global temperatures are regulated by atmospheric gases such as water vapor, CO₂ (Carbon Dioxide), N₂O (Nitrous Oxide) and CH₄ (Methane). These gases allow solar radiation to enter the Earth's atmosphere, but prevent radiative heat from escaping, thus warming the Earth's atmosphere. GCC can occur naturally as it has in the previous ice ages. Over the years human activity such as the burning of fossil fuels has released carbon into the air in the form of CO₂. ~~However, according to the California Air Resources Board (CARB), the climate change that is currently in effect differs from previous climate changes in both rate and magnitude (CARB, 2004, Technical Support document for Staff Proposal Regarding Reduction of Greenhouse Gas Emissions from Motor Vehicles).~~ Gases that trap heat in the atmosphere are often referred to as ~~Green House Gasses~~ greenhouse gases (GHG). GHG are released into the atmosphere by both natural and anthropogenic (human) activity.

Greenhouse gases analyzed in the informational GHG study for the Proposed Project are CO₂, CH₄, and N₂O. ~~In order to~~ To simplify GHG calculations, both CH₄ and N₂O are converted to equivalent amounts of CO₂ and are identified as carbon dioxide equivalent (CO₂e) based on an individual gases' global warming potential. The measurements for analysis are listed in Metric Tons CO₂ equivalent, or MTCO₂e, annually.

Climate Change – Regulatory Setting

Several governmental agencies are now working towards policies and standards that will work at the federal, state, and local levels. The California Air Resources Board (CARB), California Environmental Protection Agency (Cal EPA), the U.S. Environmental Protection Agency (EPA) or other appropriate governmental organizations have not yet developed formal guidelines for California Environmental Quality Act (CEQA) assessments for climate change and recommend that lead

agencies consider a project's consistency with relevant, adopted regional plans to assess a project's impacts related to GHG emissions.

The California Assembly Bill 32 (AB 32), the California Global Warming Solutions Act, signed into law by Governor Schwarzenegger in 2006, requires that by 2020 the state's greenhouse gas emissions be reduced to 1990 levels, roughly a 16 percent reduction. AB32 set out parameters and timelines for adopting implementing regulations, which are detailed in the informational GHG report. It also gave CARB primary responsibility for reducing statewide GHG emissions however, the California Air Resource Board (CARB) developed the Climate Change Scoping Plan December 2008 which identified early action items to be enforceable as of January 1, 2012 and is also working on an update with draft plans currently under review with possibilities of adoption on May 22, 2014. The update if adopted will identified key areas (energy, transportation, agriculture, water, waste management, and natural and working lands), along with short lived climate pollutants, green buildings, and the Cap and Trade Program.

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), prepared by the California Air Resources Board (CARB), outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and to advance towards 2050 climate goals. The 2017 Scoping Plan identifies the reductions needed by each GHG emission sector (e.g. transportation, industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste). The 2017 Scoping Plan serves as an update to the previous scoping plan, adopted in 2014.

California Assembly Bill No.341(AB 341): AB 341 makes a legislative declaration that it is the policy goal of the state that no less than 75% of solid waste generated be source reduced, recycled, or composted by the year 2020. This bill increases diversion requirements by an additional 25% over Business as Usual as was previously defined under California law.

California Senate Bill No. 97 (SB 97): SB 97 requires the Office of Planning and Research to prepare and transmit to the Resources Agency, guidelines and directed amendments to the CEQA statute specifically for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions.

Energy Independence and Security Act of 2007: The Energy Independence and Security Act of 2007 (P.L. 110-140, H.R. 6) is an energy policy law adopted by congress which consists mainly of provisions designed to increase energy efficiency and the availability of renewable energy. In October 2012, the Act was updated to require automakers to boost fleet wide gas mileage averages to 54.5 mpg for cars and

light-duty trucks by Model Year 2025. This fleet wide average is known as the Corporate Average Fuel Economy (CAFE) standard.

California Assembly Bill No. 1493 (AB 1493): Vehicle emissions of GHG were subsequently targeted in 2002 with the passage of AB 1493, which required CARB to develop regulations (later known as the Pavley Standards) to limit GHG emissions by cars and light duty trucks.

Advanced Clean Car Program: The Advanced Clear Car Program (ACCP) combines Pavley II and other Low-Emission Vehicle (LEV) regulations with new approaches to increase the number of zero emission vehicles and hybrids and control smog, soot, and global warming. It would be in effect from 2017 to 2025. Additional Vehicle Efficiency Measures within the Scoping Plan mandated by AB 32 include low friction oil, tire pressure regulations, tire treat program, solar reflective automobile parts, and specialized window glazing. Some of these provisions are still under review as of the date of this DEIR, although the tire pressure regulations have been adopted.

Executive Order S-3-05: On June 1, 2005, California Governor Arnold Schwarzenegger mandated GHG emission reduction targets as follows:

- By 2010: reduce GHG emissions to 2000 levels
- By 2020: reduce GHG emissions to 1990 levels
- By 2050: reduce GHG emissions to 80 percent below 1990 levels

Executive Order S-01-07: On January 18, 2007, California Governor Schwarzenegger mandated a statewide goal to reduce the carbon intensity of California's transportation fuel by at least ten percent by 2020 through S-01-07. The order also requires that a California Specific Low Carbon Fuel Standard be established for transportation fuels.

Executive Order B-30-15 and Senate Bill 32: Executive Order B-30-15 established a statewide emissions reduction target of 40% below 1990 levels by 2030.

Executive Order S-14-08: Also known the Renewable Portfolio Standard (RPS), this order requires that all retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020.

Title 24 Energy Code: Title 24 Part 6 of the California Code of Regulations (California Energy Code), regulates the energy consumption of new residential and non-residential buildings in California. The California Energy Commission (CEC) updates the California Energy Code every three years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions. The current (2016) California Energy Code is scheduled to be

replaced by the 2019 California Energy Code on January 1, 2020. The 2019 California Energy Code will require builders to use more energy-efficient building technologies for compliance with increased restrictions on allowable energy use. Additionally, new residential units will be required to include solar panels, sized to offset the estimated electrical requirements of each unit. The County of San Diego has approved guidelines for GCC analysis, as noted below. Analysis of GCC for the proposed project includes CEQA-level discussions that evaluate the potential impact of the proposed project with regard to its contribution to GHG emissions based on the intent of AB32.

County of San Diego Climate Action Plan: The County of San Diego developed a Climate Action Plan (CAP) to address the issues of growth and climate change in the County. The CAP incorporates already-established County goals described in the recently adopted General Plan and in the County Strategic Energy Plan (SEP), which identifies measures to develop strategy that addresses climate change. The CAP is considered a “living” document and was written to be updated as needed when new information, technology, or legislation requires.

County of San Diego Guidelines for Determining Significance—Climate Change: As a supplement to the measures outlined in the CAP, the County of San Diego Planning and Development Services (PDS) department developed an approach to addressing climate change and established significance thresholds for CEQA Documents.

The overarching threshold for CEQA compliance is based on a project’s consistency with the County CAP. This document also identifies four implementing threshold options for determining significance (Source: Draft Guidelines for Determining Significance—Climate Change November 2013). These guidelines along with the County’s CAP meet the requirements of AB 32 and address the potential cumulative impacts that a project’s GHG emissions could have on GCC. Table 3-1-1, “Significance Thresholds”, identifies the County’s approved significance thresholds

Table 3-1-1: Adopted Significance Thresholds.

TITLE	LEVEL FOR DETERMINING SIGNIFICANCE
Bright Line Threshold	2,500 MT CO ₂ e per year
Efficiency Threshold	4.32 MT CO ₂ e per year per service population (residents + employees)
Performance Threshold	16% GHG emissions reductions below unmitigated project in 2020
Stationary Source Threshold	10,000 MT CO ₂ e per year

County of San Diego Draft Guidelines for Determining Significance and Report Format and Content Requirements for Climate Change have been approved by the County to define GHG thresholds and specify content for technical analysis of this subject area.

Title 24 Energy Standards: Title 24 of the California Code of Regulations was enacted in 1978, and requires buildings to meet energy efficiency standards. Title 24 standards are updated periodically to allow for the consideration and implementation of new energy efficient technologies.

California Assembly Bill No. 1493 (AB 1493): Vehicle emissions of GHG were subsequently targeted in 2002 with the passage of AB 1493, which required CARB to develop regulations to limit GHG emissions by cars and light duty trucks.

Executive Order S-3-05: On June 1, 2005, California Governor Arnold Schwarzenegger mandated GHG emission reduction targets as follows:

- By 2010: reduce GHG emissions to 2000 levels
- By 2020: reduce GHG emissions to 1990 levels
- By 2050: reduce GHG emissions to 80 percent below 1990 levels

Climate Action Team: In order to meet the targets established under Executive Order S-3-05, the Governor appointed a Climate Action Team (CAT) which issued the 2006 CAT Report which contains a number of recommendations and strategies to help ensure that the targets established in the executive order are met.

California Senate Bill No. 1368 (SB 1368): SB 1368 directs the California Public Utilities Commission (CPUC) to adopt a GHG emission performance standard (EPS) for the future power purchases of California utilities.

California Assembly Bill 32 (AB 32): In 2006, AB 32, the California Global Warming Solutions Act, was signed into law by Governor Schwarzenegger, giving CARB primary responsibility for reducing statewide GHG to 1990 levels by 2020.

Executive Order S-01-07: On January 18, 2007, California Governor Schwarzenegger mandated a statewide goal to reduce the carbon intensity of California's transportation fuel by at least ten percent by 2020 through S-01-07. The order also requires that a California Specific Low Carbon Fuel Standard be established for transportation fuels.

California Environmental Quality Act (CEQA) Significance Thresholds: As directed by SB 97, the Natural Resources Agency adopted amendments to CEQA Guidelines for greenhouse gas emissions on December 30, 2009, which were adopted by the

Office of Administrative Law on February 16, 2010 and became a part of the California Code of Regulations. The amendments became effective March 18, 2010. Section 15064.4 – Determining the Significance of Impacts from Greenhouse Gas, directs the lead agency to establish methodologies for quantifying GHG emissions and to rely on a qualitative analysis of performance-based standards. The lead agency is directed to consider the following factors in assessing impacts from GHG emissions:

- The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.

General Questions recommended within the environmental checklist are:

- Will the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment?
- Will the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions?

County of San Diego General Plan. The County of San Diego General Plan (County General Plan) includes smart growth and land use planning principles aimed to reduce GHG emissions. GCC and GHG reduction policies are addressed in plans and programs in multiple elements of the County General Plan. The County's General Plan was most recently updated in 2011.

County of San Diego Climate Action Plan. The County released a Draft Climate Action Plan (CAP) and related Draft Supplemental EIR for public review in August 2017. The Final CAP and Supplemental EIR were adopted by the County's board of supervisors in February 2018 and remains the most recently adopted and applicable plan for CEQA purposes. The purpose of the CAP is to serve as mitigation to reduce GHG emissions resulting from buildout of the County's 2011 General Plan Update. The CAP was prepared in accordance with CEQA Guidelines Section 15183.5 to allow projects consistent with the general plan the opportunity to use the CAP as a CEQA streamlining tool.

Global Climate Change—Gases

For the purposes of this analysis, emissions of carbon dioxide, methane, and nitrous oxide were evaluated. Although other substances, such as fluorinated gases, water vapor, and aerosol gases, also contribute to global climate change, they are not included in this analysis due to an absence of standards or accepted methodologies for measuring them.

The following discussion evaluates GHG in terms of Global Warming Potential (GWP), which is the measurement of a gas's potential contribution to global warming.

For a definition of these gases, please refer to Appendix N.

Existing Onsite Conditions Related to Global Warming

The site currently reflects the rural agricultural setting common to the Pala/Pauma area, and has been developed with approximately 154 acres of grove, as well as a small apiary component. Current uses onsite consist of the active agricultural operations with associated residence, caretaker residence, offices, and other buildings related to the farming enterprise. These uses likely generate and store some level of carbon emissions. As a conservative measure, no reduction was taken in the climate change evaluation for existing uses.

It is anticipated that the existing/natural vegetation and soils at the project site currently store carbon emissions; however there is no identified or accepted methodology for calculating net changes in carbon storage associated with proposed development projects. Although there may be some loss of carbon storage with implementation of the project (through removal of on-site vegetation and soils), the proposed retention of existing vegetation, landscaping as well as future agricultural uses of the project site will facilitate onsite carbon storage.

3.1.2.2 Analysis of Project Effects and Determination as to Significance

The significance criteria used to evaluate the Proposed Project's GHG emissions impacts are based on the recommendations provided in Appendix G of the CEQA Guidelines and the thresholds of significance as provided in the County of San Diego's Guidelines for Determining Significance: Climate Change. Based on these thresholds:

A proposed project would have a less than significant cumulatively considerable contribution to climate change impacts if it is found to be consistent with the County's Climate Action Plan; and, would normally have a cumulatively considerable contribution to climate change impacts if it is found to be inconsistent with the County's Climate Action Plan.

In evaluating the project relative to Appendix G criteria, this analysis considers the provisions of CEQA Guidelines Section 15183.5, which states the following:

Lead agencies may analyze and mitigate the significant effects of greenhouse gas emissions at the programmatic level, such as in a general plan, a long-range development plan, or a separate plan to reduce greenhouse gas emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an EIR containing a programmatic analysis of greenhouse gas emissions as provided in section 15152 (tiering), 15167 (staged EIRs), 15168 (program EIRs), 15175-15179.5 (Master EIRs), 15182 (EIRs prepared for specific plans), and 15183 (EIRs prepared for General Plans, Community Plans, or Zoning).

On February 14, 2018, the County adopted a CAP in accordance with CEQA Guidelines Section 15183.5 in order to afford projects consistent with the General Plan the opportunity to use the CAP as a CEQA streamlining tool. In conjunction with the CAP, the County also adopted CEQA implementation tools, including the Guidelines for Determining Significance: Climate Change (Guidelines) and Appendix A, Final Climate Action Plan Consistency Review Checklist (CAP Checklist)

The County's CAP identifies strategies and measures that would regionally reduce impacts related to global climate change in line with State targets and goals. Although it is unlikely that a single project would generate emissions that make a discernable contribution to climate change, cumulative emissions from many projects could impact global GHG concentrations. The CAP document itself was prepared to comply with mitigation measures identified in the County's General Plan Update (GPU) PEIR to mitigate the GHG impacts of the General Plan. The proposed project was included in the GPU PEIR as a "pipeline project." The emissions forecasts provided in the CAP are based on growth projections that include these pipeline projects. The CAP SEIR provides the appropriate level of environmental review allowing future projects to streamline analysis of GHG emissions through the CAP Checklist. Projects found to be consistent with the CAP Checklist would therefore be consistent with the County's CAP, GPU, and applicable reduction measures that would reduce the project's contribution to cumulative GHG impacts to a less than considerable level.

A project's consistency with the CAP, and therefore level of significance under CEQA, is evaluated through the completion of the two-step process outlined in the CAP Checklist. Step 1 in the CAP Checklist assess the project's consistency with the projections in the CAP and General Plan. If a project is consistent with the existing

General Plan land use designations or any pre-existing designations that still apply to the site, it can be determined to be consistent with the CAP. Step 2 of the CAP Checklist identifies CAP GHG reduction measures that would apply to discretionary projects and assess a project's consistency with CAP measures. The applicable requirements outlined in the CAP Checklist shall be required as a condition of project approval and the project must provide substantial evidence that demonstrates how the project would implement each applicable CAP Checklist requirement. Through the implementation of each applicable measure, a project would be considered consistent with the CAP and would result in less than significant GHG emissions and would not result in a cumulatively considerable contribution to a GHG impact.

Step 1 – Land Use Consistency

The Proposed Project site is within the Semi-Rural Residential (SR-10) Land Use Designation of the General Plan, with a density of one dwelling unit per 10 acres and is zoned A 70 (four acres lot size). However, the project is being processed under the Historic General Plan because it was “pipelined” under provisions of the General Plan Update and is considered to be within the Estate Development Area (EDA) regional category, which allows for combined agricultural and low density residential uses with parcel sizes of two to 20 acres. The project site is therefore subject to the (19) Intensive Agriculture land use designation and is within the Pala/Pauma Subregional Plan.

The Proposed Project would include 44 residential lots, a biological resources open space lot, an agricultural open space lot, and a recreational open space lot on a 248.2-acre site, which are consistent with the land use designations under the Historic General Plan and Zoning classifications.

Step 2 – CAP Checklist Consistency

The County's CAP sets forth strategies and measures to reduce GHG emissions in the County's unincorporated areas and from County operations. The CAP demonstrates how the County will achieve GHG emissions targets for 2020 and 2030, and demonstrates progress to 2050. A project's consistency with the CAP is determined through the completion of the CAP Checklist. The completed CAP Checklist for the Proposed Project is included as Attachment A to Appendix N

Based on the project's consistency with all applicable CAP Checklist Items, the Proposed Project would be consistent with Step 2 of the CAP Checklist. Additionally, compliance with the adopted CAP Checklist items would be required as a Condition of Approval for the Proposed Project. The project would be consistent with County General Plan and CAP, and impacts would be considered **less than significant**.

As noted above, significance determination for the project was based on the project's demonstration of CAP consistency through completion of the CAP Checklist. In addition to this determination, an informational analysis was prepared, but was not used in determining project impact significance. Rather, the informational analysis provides a reference point for estimated project emissions compared to a threshold consistent with statewide reduction targets in support of the conclusions made through the completion of the CAP Checklist. Additional discussion for this informational analysis and the threshold used is provided in Section 3.1.2.4.

Guidelines for the Determination of Significance

~~Per the requirements of AB 32, discreet early action GHG emission reduction measures are enforceable as of January 1, 2010. The state Board adopted GHG emission limits and emission reduction measures which were enforced January 1, 2012. Currently, GHG emission limits for residential projects such as the Proposed Project have not been adopted.~~

~~In response to meeting the requirements of AB 32, the County of San Diego developed a Climate Action Plan (CAP) to address the issues of growth and climate change in the County. The CAP incorporates already established County goals described in the recently adopted General Plan and in the County Strategic Energy Plan (SEP), which identifies measures to develop strategy that addresses climate change. The CAP is considered a "living" document and was written to be updated as needed when new information, technology, or legislation requires.~~

~~The County's GHG significance thresholds are intended to provide flexibility to individual projects which considers the fact that all projects are different and required different approaches and significance thresholds. Also, the CAP provides a range of feasible measures and quantifies their effectiveness to demonstrate that the County's reduction target can be met.~~

~~As a supplement to the measures outlined in the CAP, the County of San Diego PDS developed an approach to addressing climate change and have established significance thresholds for CEQA Documents. This document identifies four implementing threshold options for determining significance (Source: Draft Guidelines for Determining Significance—Climate Change June 2012). These guidelines along with the County's CAP meet the requirements of AB 32 and address the potential cumulative impacts that a project's GHG emissions could have on GCC. Table 3-1-1, "Adopted Significance Thresholds," identifies the adopted significance thresholds.~~

~~Projects are first compared to the Bright Line Threshold of 2,500 MT CO₂e per year. If the project complies with the Bright Line Threshold, the impacts would be considered~~

less than cumulatively considerable as long as at least one CAP measure is incorporated into the project.

Projects with emissions that exceed the Bright Line Threshold would be required to comply with all applicable CAP measures or additional feasible mitigation measures which would reduce project impacts to a level below significance as compared to any implementing threshold. (i.e. Bright Line, Efficiency, Performance, or Stationary Source Thresholds).

Analysis

Guideline 1: Does the proposed project have emissions exceeding 900 MT CO₂e per year?

Construction GHG Emissions

CO₂ impacts related to construction were calculated using the latest URBEMIS2007 air quality model, which was developed by the California Air Resources Board (CARB). Additional gases such as CH₄ and N₂O were calculated using California Climate Action Registry General Reporting Protocol Version 3.1 such that the primary GHG gases can be estimated.

Grading and construction for the Proposed Project will produce approximately 599.31 tons of CO₂ during the worst case year and only 213.75 tons the following year. See Table 3-1-2, "Expected Construction Emissions Summary."

URBEMIS 2007 calculates CO₂ but does not provide calculations for CH₄ and N₂O. The emissions for these GHGs was derived using CO₂ outputs directly calculated by URBEMIS 2007. Based on this, the project would generate 15,212.74 grams of N₂O and 33,936.13 grams of CH₄ or 33.54 and 74.83 pounds. Multiplying them by 310 and 21 converts them to CO₂e which works out to 10,398.67 lbs and 1,571.41 lbs which converts to 4.72 and 0.71 MTCO₂e or 5.43 MTCO₂e.

Combined with Emissions calculated with URBMEIS 2007 for 2013 the total would be 599.31 MTCO₂e.

Operational GHG Emissions

Vehicular Emissions

Operational vehicular emissions from daily trips were quantified using emission levels reported from the EMFAC 2007 emission model for the year 2020. Vehicle trip length was derived using the rural setting in the URBEMIS computer program. The program models a typical one-way trip for home-work at 16.8 miles. Home-shop and home-other trips are modeled at 7.3 and 7.9 miles respectively. Approximately 49.1 percent of all trips was assigned to home-other, while home-work and home-shop were 32.9 and 18.0 percent respectively. The average trip length using these model

assumptions is 10.68 miles. According to the project traffic study entitled *Shadow Run Ranch Traffic Impact Study*, May 2014, the Proposed Project would create approximately 528 daily trips. With an average distance of 10.68 miles, the Proposed Project would be expected to add 5,639 Vehicle Miles Traveled (VMT) per day, or 1,956,746.8 miles annually.

The EMFAC2007 model for the year 2020 was used to estimate the anticipated operational emissions for the Proposed Project. The mobile source GHG emission levels were calculated and found to be 686.06 MTCO₂e.

Electricity Emissions

Electricity usage was calculated using methodologies in the California Climate Action Registry General Reporting Protocol Version 3.1—January 2009 (CCARGRPV3.1). Electricity generation rates per residential dwelling were obtained from the California Statewide Residential Appliance Saturation Study (2004). Using the study's criteria, the average electricity usage for a dwelling unit per year is 5,941 KWh annually. Therefore, the project would be expected to use 261,404 KWh per year, which amounts to 86.23 MT CO₂e.

Natural Gas Emissions

Natural gas usage was calculated using equations from the CCARGRPV3.1. Natural gas generation rates per residential dwelling unit were obtained from the South Coast Air Quality Management District's CEQA Air Quality Handbook dated 1993.

The average natural gas usage for a single-family residential unit is 6,665 Cubic Feet/Unit/Month. Typical natural gas usage includes fireplaces, heating, and major appliances. Therefore, the 44 single-family units in the proposed project would be expected to use 3,519,100 Cubic Feet per year, which translates to a total of 187.203 MT CO₂e per year.

Solid Waste Emissions

The decomposition of organic matter such as food, paper, yard trimmings, and wood are anaerobically digested by bacteria, resulting in emissions of GHGs. The California Department of Resources Recycling and Recovery (CalRecycle) estimates that the average waste generation for single-family residential use could be up to 2.04 tons/unit/year and generally consists of paper, plastic, and other organics. Based on this average, the Proposed Project is anticipated to generate 89.76 tons per year, which corresponds to 18.38 MT CO₂e emissions per year.

Water Use Emissions

Water use for the Proposed Project will indirectly use energy for preparation, treatment, and conveyance of clean water to the site. According to CAPCOA, it takes

approximately 13.022 kWh/Million Gallons (MG) of energy to deliver treated potable water. It is estimated that potable water delivered for outdoor uses would use 11,111 kWh/MG.

Water demand per capita is 119 gallons per day (GPD) for California, per USGS sources. The US Census places approximately 2.58 individuals per household. Therefore each dwelling unit requires 307 GPD. The 44 proposed units for the Proposed Project would therefore require 4,930,741 gallons per year, requiring 62,620.2 kWh of electricity per year. This translates to 20.65 MT CO_{2e} per year.

Landscaping Emissions

Electric and/or gas-powered landscaping equipment is expected at each residential unit, consisting typically of lawn mowers, weed whackers and blowers. For purposes of this analysis, it is assumed that bi-weekly landscaping would occur for the entire year, or 26 occurrences at two hours per occurrence. Baseline emissions are calculated using CAPCOA's methodology for landscaping equipment (Source: CAPCOA—Quantifying Greenhouse Gas Mitigation Measures 8/10). Based on this methodology, each residential unit is expected to produce approximately 0.223 MT of CO_{2e} per year. The Proposed Project consisting of 44 units would generate 0.223 MT x 44 units, or 9.825 MT from landscaping.

Wood Burning Fireplace Emissions

The project would be expected to include hearth options to include wood burning open fireplaces or wood burning stoves. Generally, the burning of wood will not release more carbon dioxide than the eventual biodegradation of that wood would otherwise create if it was not burned. Therefore burning wood is generally considered to be biogenic. However, inefficient burning will create other forms of GHGs such as CH₄ and N₂O which would have otherwise not been released.

Non-biogenic GHG emission factors for burning wood are published within Table C.8 within the CCARGRPV3.1. Inputs to the equation were taken from URBEMIS 2007 default settings for both fireplaces and wood stoves. The proposed project would produce 3.47 MT per year of non-biogenic GHGs from wood burning.

Summary of GHG Emissions for the Proposed Project

Table 3-1-3, "Expected CO_{2e} Emissions Summary (Operations)," totals the expected CO_{2e} emissions for the proposed project. As shown in Table 3-1-3, annual emissions are expected to be 1,011.83 MT CO_{2e}. This level of emissions does not exceed the County's Bright Line Threshold of 2,500 MT CO_{2e}.

If the project is shown to not exceed the Bright Line Threshold, the impacts will be considered less than significant as long as at least one Climate Action Plan (CAP) measure is incorporated into the project's design. The project will install Smart

Meters on each residential unit, consistent with measure E4 in the CAP. As a result of the project's low emissions and adherence to one CAP measure, project related GHG emissions do not exceed Guideline 1, impacts are less than significant, and no mitigation is necessary. Guideline 2

It should also be noted that emissions generated by this project would further be reduced through indirect measures such as low carbon fuel standards, decreased vehicular emissions due to the Pavley regulations, and renewable energy requirements placed on utility providers within California.

3.1.2.3 Cumulative Impact Analysis

The analysis of green house gas emissions is by its nature a cumulative analysis. No single project by itself can have a measurable effect on global green house gas levels. Therefore, this EIR's analysis includes the assessment of Proposed Project impacts as a cumulative impact as discussed in Section 3.1.2.2. Based on the fact the proposed project would not create emissions higher than the Bright Line Threshold, the proposed project would be required to implement at least one CAP measure. Demonstrating compliance with the CAP is determined through the use of the County CAP Compliance Checklist during project review. The Appendix G forms are provided as Attachment C of the GHG report (Appendix M of the DEIR) at the end of this report. Adherence to this requirement, along with the installation of Smart Meters on each residence to meet the County's CAP requirement, allows the project to meet the requirements of AB 32 and address the potential cumulative impacts that a project's GHG emissions could have on GCC. Therefore, the project will not result in a substantial contribution towards a cumulative impact related to global climate change. Impacts are less than significant and no mitigation is required.

3.1.2.4 Informational GHG Report Discussion

Although significance under CEQA was determined through the CAP Consistency Checklist, described previously, GHG emissions associated with construction and operation of the Proposed Project are presented here for informational purposes. This information is based on the Proposed Project's informational GHG report prepared by Ldn Consulting, Inc. and dated February 8, 2017 (included in Appendix N).

Additional thresholds supported by State agencies can be used to provide further support of conclusions determined through response to the GHG questions recommended under CEQA. The California Air Pollution Control Officers Association (CAPCOA) released a white paper entitled *CEQA and Climate Change* in January 2008 that suggests a project's impacts to GHG emissions be analyzed compared to a screening level threshold of 900 MT CO₂e per year. Projects found to generate MT CO₂e emissions below this screening level threshold are considered to

have a less than considerable contribution to the cumulative impact of climate change. This threshold provides a quantitative basis for determining that projects that are anticipated to emit GHGs below this level would not impede the ability of the State to achieve its GHG reduction targets. This 900 MTCO₂e threshold was created by CAPCOA through the review of data from pending applications for development in four cities across the state. The threshold was determined to exclude the smallest proposed developments from detailed GHG quantification and reductions, while setting a threshold that would be achievable by approximately 90 percent of projects without incorporating significant mitigation.

Based on the analysis conducted in the GHG report, the project is estimated to generate 38.81 MT CO₂e per year during the construction period (Table 3-1-1) , and 889.52 MT CO₂e per year during project operations. Therefore, the Proposed Project is estimated to generate GHG emissions during both the construction and operational phases that would be below the recommended CAPCOA screening level. Table 3-1-2 summarizes this information. The full informational GHG report including methodology, assumptions, and calculations is provided in Appendix N.

3.1.2.5 Conclusion

The Proposed Project would be consistent with the County's Climate Action Plan; therefore, impacts related to GHG emissions would be **less than significant** and no mitigation is required.

~~A global climate change report was prepared for the proposed project. The proposed project will emit GHGs directly throughout the burning of carbon-based fuels such as gasoline and natural gas as well as indirectly through usage of electricity, water and from the breakdown of organic solid waste. The proposed project would generate approximately 1,011.83 Metric Tons of CO₂e each year which is below the County's established Bright Line Threshold of 2,500 Metric Ton per year. Additionally, as required, the project would install Smart Meters on each residence in fulfillment of the requirement to meet one CAP measure. Therefore, project and cumulative level GHG emissions are less than significant. No mitigation is required.~~

3.1.3 Groundwater

The following section summarizes information from the following reports: "Assessment of Nitrogen Loading of Groundwater Shadow Run Ranch" by Wiedlin & Associates, dated July 6, 2012 and "TM 5223RPL3 Shadow Run Ranch Groundwater Supply Letter" TRS Consultants, dated November 22, 2013. The reports are included as Appendices O and P of the DEIR.

3.1.3.1 Existing Conditions

Topography and Watershed Boundaries

The site is on an alluvial fan surface derived from the erosion of the nearby steep granitic mountain slopes of Agua Tibia Mountain, Crosley Saddle, and Eagle Crag to the north and northeast. Land surface elevation at the site ranges from approximately 750 feet mean sea level (ft msl) to 1,620 ft msl. Land surface elevations in the watershed surrounding the site range from approximately 670 ft msl at the San Luis Rey River to nearly 4,780 feet at Agua Tibia Mountain. The local watershed encompassing the site covers approximately 6,700 acres (over 10 square miles).

Rainfall Distribution

Due to the steep mountain slopes and relatively high land surface elevations north of the site, the orographic effect of these slopes forces moist coastal breezes upward. As the air rises it is cooled. This process results in increasingly higher annual rainfall within the watershed as land surface elevation increases. An excerpt from the County of San Diego 30-Year Average Annual Precipitation Map overlaid on the USGS topographic map shows that average annual rainfall ranged from a low of 18 to 21 inches at the site to 33 to 35 inches at the upper reaches of the local watershed.

Geologic Setting

The oldest rocks outcropping in the site vicinity are Cretaceous age intrusive igneous rock of Agua Tibia Mountain and older pre-Cretaceous metamorphic and meta-sedimentary rocks in the north-northeast portion of the site. Rock units mapped in the area include the Woodson Mountain Granodiorite and the San Marcos Gabbro. Erosion of the high relief Agua Tibia Mountain has generated broad, coalescing alluvial fans along the margins of the San Luis Rey River Valley. The site is underlain by alluvial fan deposits that include cobble to large boulder clasts of predominantly granitic rock. The alluvial fan deposits range in age from Pleistocene to Holocene age. Alluvium is present in the San Luis Rey River Valley and in the lesser on-site tributary drainages like Frey Creek. Alluvium in the lesser tributary drainages would not be expected to be saturated with groundwater as depth to groundwater is most likely greater than the relatively shallow alluvial deposits.

The Elsinore Fault zone occurs within Pauma Valley and within the upper portion of the project site (URS, 2009). The fault zone is likely responsible for pronounced physiographic highs such as Agua Tibia Mountain and Palomar Mountain and hence is a causal factor in the development of the alluvial fans at the site.

Hydrogeology

There are six agricultural wells providing irrigation water to the site. Five ~~agricultural irrigation~~ wells, PV-6 through PV-9, and a new well, PV-11, occur on the site. These wells will continue to provide irrigation water only for the project. Well PV-10, ~~an~~

~~irrigation well~~, is located just east of the project site. All wells are ~~and is~~ owned by the Schoepe family.

There are six ~~Six~~ production wells off-site providing water to YMWD, PV-1 through PV-6A. (PV-6 is an irrigation well, which is discussed above). These wells are located along the San Luis River channel just south of the site. ~~They se~~ wells are also owned by the Schoepe family. Well PV-1 is inactive. Wells PV-2 through PV-6A are managed and pumped by the Yuima Municipal Water District (YMWD). Wells PV-2, -3, and -6A are active. Well 4 is inactive while well PV-5 is monitored by the YMWD but apparently has not been actively pumped for at least several years. The water wells were installed between 1972 and approximately 1992.

All ~~eleven~~ twelve wells are completed in the alluvial fan deposits and in some cases continue into the underlying fractured granitic rock. Total depth of the wells ranged from 175 feet at PV-1 to approximately 1,000 feet at Wells 5 and 9.

Extended pump tests conducted by pump service contractors indicate that production rates at all the wells range between 200 gallons per minute (gpm) to 450 gpm. Specific capacity values range between 1.8 gpm per foot of drawdown to 6.0 gpm per foot of drawdown.

Groundwater Occurrence

Unpumped groundwater depths measured in February 2012 for the YMWD wells and in April 2012 for the on-site wells ranged between 96 feet and 409 feet.

The overall direction of groundwater flow at the site is southward from the head of the alluvial fan toward the San Luis Rey River. Groundwater flow in the immediate vicinity of the YMWD wells is convergent as suggested by groundwater elevations at upstream wells PV-2 and 3, which have ~~having~~ somewhat lower static groundwater elevations than downstream wells, PV-4 and PV-5. The groundwater hydraulic gradient on-site is approximately 0.08 feet of groundwater elevation change per horizontal foot. As one approaches the YMWD water levels, the gradient flattens by nearly an order of magnitude to approximately 0.007 feet per foot. This change in gradient likely reflects the extended cone of depression associated with YMWD groundwater pumping.

In the western United States uplifted mountains bordered by subsided valleys, often have alluvial fans that occur along the transition between these tectonic physiographic features. The alluvial fan deposits are typically coarser grained and higher in permeability closer to the mountain front and decrease in coarseness and permeability toward the valley. Runoff coming from the mountains can soak into the coarse deposits (Fetter, 1994). Rainfall occurs at significantly higher rates in the mountains. Hence infiltration of runoff into the alluvial fans is an important hydrogeologic

process in delivering water to the water table and most probably plays a greater role in groundwater recharge than infiltration of rainfall that falls directly on to the site.

Groundwater inflow into the San Luis Rey River is not limited to the alluvial fan deposits that are present at the site. The drainage area of the San Luis Rey River at the point where the river encounters the site encompasses hundreds of square miles, including extensive areas that occur at land surface elevations greater than 4,000 feet msl where rainfall rates are exceptional high. Similarly, Pauma Valley has extensive agricultural groves, hence nitrate sources off site and upgradient of the site are also extensive and subject to degrading groundwater pumped from the YMWD water wells.

Current Groundwater Usage

Groundwater is currently used for ~~potable water needs and~~ irrigation on the Shadow Run site. ~~Groundwater~~ Bottled water is used to meet the potable water needs of an on-site manager's residence and caretaker's residence. The County of San Diego's Groundwater Ordinance estimates typical residential water use at 0.50 acre feet per year (AFY). Annual water use for two on-site residences is therefore estimated at approximately 1.0 AFY of water.

The site supports approximately 154 acres of agriculture at the present time, most of which is irrigated. Estimated per acre water use for citrus and avocado is approximately 3.5 to 4.0 AFY. Total annual use is estimated at 616 AFY³ using the more conservative 4.0 AFY figure. This water is supplied from wells currently operated on-site. The existing project, therefore, is ~~projected~~ estimated to use approximately 617 AFY of water.

Nitrate Concentrations

Groundwater samples are collected from YMWD water wells (PV-2 through PV-4) and analyzed for nitrate (NO_3^-), every 3 to 4 months. On-site, groundwater samples were collected from wells PV-6 through PV-10 on May 7, 2012 and analyzed for nitrate (as nitrogen), Total Kjeldahl Nitrogen (TKN), and Total Dissolved Solids (TDS) (Appendix B). TKN is a measure of the sum of the concentrations of organic nitrogen, ammonia (NH_3), and ammonium (NH_4^+). TKN concentrations in the on-site groundwater samples were all below the laboratory reporting limit of 0.5 mg/l.

The distribution of nitrate in groundwater across the site indicates that the grove operation is a likely source of nitrate as concentrations in the up-gradient water wells are at or near the reporting limit. Nitrate concentrations at the site appear to increase

³ This excludes approximately 40 AFY of irrigation water provide to an off-site lot. This use will not change with project approval. Since it will not change due to the project, this water use is excluded from subsequent analysis.

as groundwater flows from the up-gradient end of the grove to the down gradient end of the grove. Nitrate concentrations are greatest at the two most down gradient wells at the site, PV-9 and PV-10 at concentrations of 8.9 and 7.9 milligrams per liter (mg/l) compared to a state and federal maximum contaminant level (MCL) of 10 mg/l. Groundwater samples collected at YMWD wells, PV-2 through PV-4, in October and September 2011, ranged from 6.4 to 7.3 mg/l. The slightly lower nitrate concentrations suggest that groundwater inflow along the San Luis Rey River provides somewhat greater dilutive capacity for nitrate compared to groundwater flow beneath the site.

Nitrogen Mass Balance

A five year record of fertilizer purchases for the Shadow Run Ranch provides the basis for estimating the mass of nitrogen delivered to the soil from agricultural activity. A literature search for citrus tree uptake of nitrogen was researched on-line, through the San Diego County/University of California, Davis Agricultural Extension, and the University of California, Riverside (UCR) Library. On-line research identified research conducted by the University of Florida that estimated nitrogen uptake efficiency in citrus trees. Gary Bender, Ph.D. a farm advisor from the San Diego County/University of California, Davis Agricultural Extension, who specializes in deciduous fruit trees, reviewed one of the University of Florida nitrogen uptake efficiency publications and indicated that there were no comparable studies in Southern California (Bender, 2012). A literature search at the UCR Library also did not provide any comparable studies.

Nitrogen uptake efficiency indicates how much of the nitrogen applied to the soil is taken up by the crop. A summary document prepared by the University of Florida reports that a well- managed citrus grove planted in sandy soil will have a nitrogen uptake efficiency between 40 and 60 percent (University of Florida, 2006). Hence, approximately 50 percent of the nitrogen in fertilizer remains in the environment. Once oxidized to nitrate, nitrogen in soil is typically stable and is unlikely to leave the hydrogeologic environment other than through groundwater pumping.

Under the project, 44 residential lots equipped with septic systems will be developed at the property. As part of the development, grove acreage will decrease from 154 acres to 110 acres. Accordingly, nitrate loading will increase from one source and decrease from another.

Current Nitrogen Loading

Fertilizer purchase records for Shadow Run Ranch from 2007 through 2011 indicate that between approximately 8,300 kilograms (kg) to 20,100 kg of Total Nitrogen are

purchased annually. Over the five year period Shadow Run Ranch Total Nitrogen purchases averaged 12,860 kilograms per year. Assuming a nitrate uptake efficiency of 50 percent, approximately 6,430 kg of nitrogen is expected to reach the water table from current agricultural practices.

3.1.3.2 Analysis of Project Effects and Determination as to Significance

Guidelines for the Determination of Significance

The guidelines to determine impacts to groundwater quantity were derived from the *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements, Groundwater Resources* (March 19, 2007). A project would have a significant impact related to groundwater if it would:

1. For proposed projects in fractured rock basins, a soil moisture balance, or equivalent analysis, conducted using a minimum of 30 years of precipitation data, including drought periods, concludes at any time groundwater in storage is reduced to a level of 50% or less as a result of groundwater extraction.
2. Offsite well interference will be considered a significant impact if after a five year projection of drawdown, the results indicate a decrease in water level of 20 feet or more in the offsite wells.
3. (i) Proposed projects requiring groundwater resources associated with single-family residences require well production during the well test to be not less than 3 gallons per minute (gpm) for each well tested. Proposed projects that cannot meet this requirement will be considered to have a significant impact.

 (ii) Where analysis of a residential well test indicates that greater than 0.5 feet of residual drawdown is projected, the proposed project will be considered to have a significant impact.

 (iii) The analysis of the residential well test must indicate the amount of drawdown predicted to occur in the well after five years of continual pumping at the rate of projected water demand (a) will not interfere with the continued production of sufficient water to meet the needs of the anticipated residential use(s), and (b) must be less than the saturated depth of water above the pump intake or 100 feet, whichever is less. Proposed projects that cannot meet this guideline will be considered to have a significant impact.
4. Groundwater resources for proposed projects requiring a potable water source must not exceed the Primary State or Federal Maximum Contaminant Levels (MCLs) for applicable contaminants. Proposed projects that cannot demonstrate compliance with applicable MCLs will be considered to have a significant impact.

Analysis

Future Groundwater Use

Water use is projected for The project proposes 44 residential lots, a 39.12 acre agricultural lot, 3.5 acres of a recreation lot, and the retention of approximately 1.0 to 1.5 acres of grove on each individual lot. While continuation of agriculture on individual private lots cannot be guaranteed, retention of approximately 1.5 acres of grove per lot is assumed to obtain a conservative water use analysis. Total projected acreage requiring groundwater is 109.1 acres. All agriculture located in In addition, some agriculture located in the future biological open space will be taken out of production.

Potable residential water use will therefore be approximately 22.0 AFY based on the County of San Diego's residential water use standard of 0.5 AFY per residence.⁴ Agricultural water use is estimated at 105.1 AFY. Non-potable agricultural water use is estimated at 436.4 AFY. Total potable and non-potable water use on the site therefore will be approximately 458.4 424.4AFY. The project will result in an overall net reduction in water use of 159 AFY of water (617-458), a reduction of approximately 25 percent. a net reduction of 44 acres of agricultural land, a reduction in acreage of approximately 28 percent.

Potable Water Service

The Project proposes to annex into the MWD, CWA, and YMWD Yuima Municipal Water Districtfor its potable water needsservice. Water for irrigation in the agricultural open space lot and residential lots will be provided by the applicant. The existing infrastructure on the site will be modified to provide a separate non-potable water supply system to the agricultural open space lot and individual lots.

The boundary adjustment for the project will result in three off-site lots (Parcels A, B, and D of the boundary adjustment) immediately east of the subdivision area that total 17.16 acres. These lots are also proposed for annexation but are not a part of the proposed subdivision area and no potable water service hook-ups will be provided. This area currently supports an agricultural use and currently receives approximately 40 AFY of non-potable water from wells on the project site. This is slated to continue with or without project approval. Two-Three adjacent offsite parcels owned by the

⁴ An off-site residence currently being served by MMWD is being annexed to YMWD along with the project. it may apply for a hook-up to YMWD for potable water after annexation. While no application to this effect has been filed, it is reasonable to expect it will be initiated. Because the usage factor of 0.5 AFY for a residence will not change, overall water usage will not change. Therefore this additional water use is not included in the analysis as a new water demand. The applicant supplies 40 AFY of water per year to an offsite agricultural area. This is projected to continue. Since there is no net change in water use, this number is not included in use calculations. The approximately 4.63-acre visual buffer will retain agriculture. An area equal to or greater than this will be removed from cultivation in Frey Creek as part of the conservation plan. Since these areas off-set one another, they are not included in the use calculations.

applicant (APN 111-080-16, ~~and -17 and -20~~) totalling ~~13.38~~10.46 acres will also be annexed. No water lines will be extended to these parcels by the Project.

The YMWD has reviewed the annexation proposal and has indicated it can serve the project in a service letter provided in Attachment A of the DEIR. If the Shadow Run Ranch project is approved and the DEIR is certified by the County Board of Supervisors, the Project will be required to obtain LAFCO approval of the annexation. A synopsis of the annexation process is included in Chapter 1 Attachment B of the DEIR. YMWD water will be supplied from a point on the south side of SR 76 adjacent to Adams Drive and will enter the site at the main project entry on SR76 via Haas Grove Lane. The water distribution system will follow proposed streets to each lot. Approximately 22.0 AF of potable water will be used by the project.

The applicant will continue to own and maintain the reservoir and wells or a Homeowners Association will assume ownership and operation of the system. Water will be pumped to the existing reservoir where it will be distributed via gravity feed. Some wells are located in areas designated for biological open space protection. Access to these wells for maintenance purposes will be maintained to ensure continued access to irrigation water for on-site agriculture.

The project design will encourage conservation by reserving potable water for residential use only. Overall water use will also decline by approximately ~~28~~25 percent as a result of the conversion of some agricultural land to residential uses and open space.

Anticipated Nitrogen Loading in Groundwater from Septic Discharge

Nitrogen loading to groundwater under the new project will differ from current conditions in two ways. First, the residential development will include 44 individual septic systems with nitrogen bearing septic effluent. Second, the Proposed Project will also have less grove acreage. This will result in a decrease in the mass of nitrogen enriched fertilizer applied to the soil. The following provides an estimate of how each change in land use may affect the rate of nitrogen loading to groundwater.

The addition of 44 residential homes will generate domestic wastewater containing reduced forms of nitrogen. The discharge of the wastewater via leach fields and infiltration through the unsaturated zone typically oxidizes the reduced forms of nitrogen to nitrate.

Nitrogen loading from domestic wastewater is a function of the average septic wastewater flow rate and the average nitrogen concentration. Wastewater flow is generally a function of the number of people residing in the home. It is assumed that on average the homes in the development will have five bedrooms and with six occupants. The California Department of Water Resources estimates, for the purpose

of urban water management planning, that indoor water use in newer homes is approximately 75 gallons per day per resident (DWR, 2011). However, this per capita rate of internal residential water consumption is considered very high by DWR and EPA (DWR, 2011 and EPA, 1980) and both agencies indicate most residences use approximately 55 gallons per day per resident.

Septic leachate was collected from suction lysimeters that were placed below several different San Diego County leach fields in a study conducted by San Diego State University. Nitrate concentrations detected in these samples ranged between 30 and 40 mg/l (Huntley, 1987).

Alternatively, the EPA Design Manual for Onsite Wastewater Treatment and Disposal (EPA, 1980) reports that approximately 11.2 grams of Total Nitrogen per day can be anticipated per individual resident. This approach permits bypassing an estimate of the average wastewater flow rate.

Applying both approaches, the estimated annual mass of Total Nitrogen applied to the site from the septic discharge of 44 homes ranges between 1,094 and 1,079/kg per year.

Grove acreage is expected to decrease from the current ~~200-154~~ acres to ~~144-109.1~~ acres after development. Assuming uniform fertilizer application rates across the grove it would be expected the Total Nitrogen application to the soil would decrease by ~~56-44.9~~ acres (28 percent). Since the average annual Total Nitrogen application to soil over the past five years is 12,860 kg, a 28 percent decrease would result in a reduction of approximately 1,8523,600 kg/year being applied.

Septic systems would add approximately 1,094 kg/year of Total Nitrogen and the reduction of groves would decrease Total Nitrogen by approximately 3,600 kg/year. This results in a net reduction of nitrogen loading of approximately 2500 kg/ year.

The anticipated reduction in nitrogen loading is approximately 19 percent of the current average nitrogen loading rate. Assuming that the sole source of nitrogen for on-site groundwater is on-site fertilizer applications, an 19 percent reduction in nitrogen loading would imply an eventual 19 percent reduction in nitrate concentrations in groundwater. Hence a 9 mg/l nitrate concentration may eventually decline to less than 8 mg/l. As both of these values fall within the normal range of variability observed in nitrate concentrations measured at the YMWD wells, it is likely that the decline in nitrate concentrations associated with the project would be difficult to detect.

With regard to analysis of Guidelines 1 through 3, since the Proposed Project represents a reduction in groundwater demand (~~28~~25%), detailed analysis of these thresholds is not required. With regard to Guideline 4, the project will not use

groundwater for potable use. Potable water for the ~~1844~~ residential lots will be provided by YMWD.

In summary, impacts to groundwater resources are considered to be less than significant since the project will use less groundwater than current conditions. No guidelines are exceeded, and no mitigation is required.

3.1.3.3 Cumulative Impact Analysis

All of the cumulative project identified in Table 1-1 and on Figure 1-6 were considered in this analysis. Based upon research on each of these projects, none were identified as having an impacts related to groundwater use or groundwater quality. Additionally, since the project results in a reduction of groundwater use compared to current usage on the project site, it would not contribute substantially to a cumulative impacts. Therefore, cumulative impacts are less than significant and no mitigation is required.

3.1.3.4 Conclusion

A groundwater assessment was prepared for the project. The analysis concluded that current annual groundwater usage at the subject site is 617 AFY. Proposed future potable and non-potable groundwater use will be approximately ~~443-458~~ AFY, which represents a ~~28-25~~ percent reduction. Impacts to groundwater resources are considered to be less than significant since the project will use less groundwater than current conditions. Groundwater quality, as related to nitrogen loading was also analyzed. Grove acreage is expected to decrease from the current ~~154 200~~ acres to ~~109.1~~ 144 acres after development and a corresponding reduction in nitrogen application would occur. Proposed septic systems for future residences would add nitrogen. However, when a reduction in nitrogen application to agricultural areas is considered, the net change represents a reduction of 2500 kg/year or approximately 19 percent. Therefore the 9 mg/l nitrate concentration detected are not expected to increase due to project development, and may eventually decline to approximately 8 mg/l. Impacts related to groundwater quality were determined to be less than significant. Cumulative impacts were also determined to be less than significant.

3.1.4 Hydrology and Water Quality

The following technical studies were prepared for the project to address project impacts related to hydrology and water quality:

- Drainage Study for Shadow Run Ranch by Mason & Associates, December 20, 2019 (Appendix Q)
- ~~Design of IMPs for Hydromodification and Water Quality Purposes, prepared by~~
Tory R. Walker Engineering, December 9, 2013 May 1, 2012 (Appendix R)

- ~~Major Stormwater Quality Management Plan for Shadow Run Ranch, prepared by Masson & Associates, December 20, 2019~~ September 13, 2012 (Appendix S)

3.1.4.1 Existing Conditions

Site Conditions

The project site is located adjacent to State Route 76/Pala Road (SR76), 10 miles east of the Interstate 15 (I15) freeway, within the community of Pala, in San Diego County, California. Opposite SR76 is the San Luis Rey River (SLRR), towards which the seven onsite drainages drain via established culverts. An existing bridge structure spans Frey Creek at the southwest corner of the property.

Approximately 154 acres of the property is covered in citrus and avocado groves and slopes at a grade less than 15 percent from the northern boundary to the southern boundary. The site is currently in a natural state, with elevations ranging from a high of 1,620 feet above mean sea level (MSL) in the north, sloping down to 730 feet MSL to the southern property line along SR76 in the south. The onsite soil types, the majority of which are hydrologic soils type “A” with some of type “B” present, are known to drain well and therefore have a low potential for runoff.

The Project is within the Pauma HSA Hydrologic Sub-area (3.21) of the San Luis Rey Hydrologic Unit (3.00) as described by the Water Quality Control Plan for the San Diego Basin (“Basin Plan”), adopted by the California Regional Water Quality Control Board, San Diego Region, dated September 8, 1994 and amended May 5, 1998. The receiving water of the project is the San Luis Rey River which lies approximately 700 feet to the south of the project site.

Beneficial uses for the hydrologic unit include: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Non-contact Water Recreation, Warm Freshwater Habitat, Wildlife Habitat, and Rare, Threatened, or Endangered Species Habitat.

The nearest impaired body of water per Section 303(d) of the Clean Water Act is the SLRR, which is impaired by ~~chloride~~ nitrogen, phosphorus, and indicator bacteria. This impairment is located ~~between the river’s outflow to the Pacific Ocean and upstream (east) of Interstate 15 for an estimated distance of~~ along the lower 13-35 miles. ~~This impairment is located between the river’s out-flow into the Pacific Ocean and upstream along the lower 13 miles. The project is located 19 miles upstream from the impairment, well outside of the area of stress.~~

Regulatory Setting

Projects within the County of San Diego must comply with the local, state, and federal regulatory programs and documents which govern the project’s construction

and post-construction stormwater runoff and protect the receiving waters within the hydrologic unit in which the project is located. The following lists those regulations which govern water quality issues within the project's hydrologic unit:

Federal Clean Water Act (CWA)

The CWA was created in 1977 to enact the Federal Water Pollution Control Act Amendments of 1972. The CWA placed restrictions on pollutants allowed to be discharged into waters of the United States by industrial and agricultural land uses. The CWA was augmented by the Clean Water Act in 1985, which extended similar restrictions to stormwater runoff from municipal stormwater systems (MS4). The CWA describes the standards and enforcement procedures that must be adhered to.

National Pollution Discharge Elimination System (NPDES)

The National Pollution Discharge Elimination System (NPDES) is a CWA permit program that regulates specific point-sources of pollution, such as pipes or man-made ditches. Construction runoff falls within the purview of the NPDES. The State Water Resource Control Board (SWRCB) has the permitting authority to implement the NPDES.

Porter-Cologne Water Quality Control Act (PCWQCA)

The PCWQCA grants ultimate authority over State water rights and water quality policy to the State Water Resources Control Board (SWRCB). However, the PCWQCA also establishes nine Regional Water Quality Control Boards (Regional Boards) to oversee water quality on a day-to-day basis at the local/regional level.

State Water Resource Control Board (SWRCB)

It is the stated goal of the SWRCB to "preserve, enhance and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations". The SWRCB is the permitting authority for the NPDES program.

Regional Water Quality Control Board (RWQCB)

The RWQCB is the regional division and implementation of the SWRCB, recognizing local differences in climate, topography, geology and hydrology. The RWQCB enforces the Water Quality Control Plan for the San Diego Basin, and oversees the implementation of the provisions of the General Permit, which includes the review, monitoring, and enforcement of SWMPs.

RWQCB Municipal Stormwater Permit

Municipal co-permittees or dischargers are those cities which own or operate a municipal separate storm sewer system through which it discharges urban runoff into waters of the United States within a region. The San Diego region has 21 co-

permittees which all operate under a Municipal Stormwater Permit that requires the establishment of Best Management Practices (BMPs) for any construction project. The project is in an area covered under a permit issued to the County of San Diego.

The County of San Diego BMP Design Manual (BMP DM)~~Standard Urban Stormwater Mitigation Plan for Land Development and Public Improvement Projects (SUSMP)~~

The BMP DM-SUSMP addresses the land development and capital improvement portion of the County's Stormwater Program. The BMP DM-SUSMP focuses on project design requirements and related post-construction requirements, and dovetails with long-established County CEQA processes and land development review and approval processes.

The Manual addresses and provides guidance for complying with, updated post-construction stormwater requirements for Standard Projects and Priority Development Projects (PDPs), and provides updated procedures for planning, preliminary design, selection, and design of permanent stormwater BMPs based on the performance standard presented in the MS4 Permit and the WPO.~~The SUSMP identifies issues of major concern for water quality. Any changes to a project's hydrologic regime, such as increased runoff volumes and velocities, reduced infiltration, etc., would be considered a condition of concern if the change would impact downstream channel and habitat integrity. As a result, the SUSMP requires that a drainage study be provided for each project which addresses any potential changes to the area's hydrologic conditions. The SUSMP calls specifically for no change in runoff rates for development projects disturbing over 50 acres as part of the required Interim Hydromodification Criteria.~~

The County of San Diego Watershed Protection, Storm Water Management, and Discharge Control Ordinance (WPO) (Ordinance No. 104109926)

The WPO defines the water quality requirements that are legally enforceable in the unincorporated parts of San Diego County. The WPO includes definitions for Standard Projects and Priority Development Projects (PDPs). PDPs are subject to additional requirements for pollutant control and hydromodification management.

Hydromodification

Hydromodification refers to changes in the magnitude and frequency of stream flows as a result of urbanization and the resulting impacts on receiving channels in terms of erosion, sedimentation, and degradation of in-stream habitat. The need to address hydromodification and its influence on water quality is included in the San Diego Regional Water Quality Board ~~Order R9-2007-0004~~Order No. R9-2013-0001, as amended by Order No. R9-2015-000, and Order No. R9-2015-0100, which requires

the San Diego Stormwater Co-permittees to implement a Hydromodification Management Plan. PDPs are required to include hydromodification BMPs that are sized and designed such that post-project runoff conditions (flow rates and durations) will not exceed pre-development runoff conditions by more than 10 percent (for the range of flows that result in increased potential for erosion, or degraded instream habitat downstream of PDPs. The purpose of the plan is to manage increases in runoff discharge rates and duration from all Priority Development Projects, where such increased rates and duration are likely to cause increased erosion of channel beds and banks and sediment pollutant generation or other impacts to beneficial uses and stream habitat due to increased erosive force.

3.1.4.2 Analysis of Project Effects and Determination as to Significance

The guidelines for the determination of significance were selected based on the *County of San Diego Guidelines for Determining Significance – Hydrology* (July 30, 2007).

A project is generally considered to have a significant effect if it proposes any of the following, absent specific evidence to the contrary. Conversely if a project does not propose any of the following, it will generally not be considered to have a significant effect on hydrology absent specific evidence of such as effect.

Surface Hydrology

Guidelines for the Determination of Significance

1. The project will substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
2. The project will increase water surface elevation in a watercourse within a watershed equal or greater than 1 square mile, by 1 foot or more in height and in the case of the San Luis Rey River, San Dieguito River, San Diego River, Sweetwater River and Otay River, 2/10 of a foot or more in height.
3. The project will result in increased velocities and peak flow rates exiting the project site that would cause flooding downstream or exceed the stormwater drainage system capacity serving the site.
4. The project will result in placing housing, habitable structures, or unanchored impediments to flow in a 100-year floodplain area or other special flood hazard area, as shown on a FIRM, a County Flood Plain Map or County Alluvial Fan Map, which would subsequently endanger health, safety and property due to flooding.

5. The project will place structures within a 100-year flood hazard or alter the floodway in a manner that would redirect or impede flow resulting in any of the following:

a. Alter the Lines of Inundation resulting in the placement of other housing in a 100 year flood hazard;

OR

b. Increase water surface elevation in a watercourse with a watershed equal to or greater than 1 square mile by 1 foot or more in height and in the case of the San Luis Rey River, San Dieguito River, San Diego River, Sweetwater River and Otay River 2/10 of a foot or more in height.

Analysis – Drainage Patterns, Peak Velocities and Flows

Guidelines 1 and 3:

A drainage study was prepared for the project to determine the peak runoff rates and velocities for the pre-development and post-development conditions. Comparisons were made at the same discharge points for each drainage basin affecting the site and adjacent properties. Three drainage basins were considered.

The Rational Method was used to determine the runoff flow rate for Basins 1 and 2 which have tributary areas less than one square mile. The Soil Conservation Service – NRCS Hydrologic Method was used to determine the peak flow rate for Basin 3 which has a tributary area of approximately four square miles. The 100-year frequency storm event was analyzed to determine peak runoff rates discharging the site for both the existing and post-development condition.

For Basin 1, runoff currently flows southerly over existing natural terrain and groves terminating at SR76 where a double 42 inch culvert conveys runoff under Highway 76. In the post-development condition, runoff will continue to flow southerly towards the existing culvert at SR76, as described in the pre-development conditions section for Basin 1. The runoff, however, will be interrupted by streets traversing the site and will be directed through additional culverts and routed in brow ditches or earthen channels back to the natural drainage courses traversing the site. Runoff discharging from proposed streets, driveways, homes and existing groove areas will be routed through tree wells, four~~six~~ proposed bioretention facilities, and one proposed infiltration basin prior to discharging to the natural terrain. The bioretention and infiltration facilities are depicted on the Preliminary Grading Plan (Appendix V) and Tentative Map for the project (Figure 1-1). The development will not result in an increase in peak discharge from Basin 1.

For Basin 2, runoff currently flows southerly through the groves in a mostly defined natural channel toward SR76 where an existing 36 inch culvert conveys runoff under

SR76. In the post-development condition, runoff will continue to flow southerly toward the existing culvert at SR76; however, it will be routed through culverts at roadway crossings and picked up in brow ditches prior to being discharged back into the natural terrain. All runoff will continue to concentrate at the existing culvert crossing at SR76. Runoff discharging from proposed streets, driveways, homes and existing groove areas will be routed through tree wells, impervious dispersion areas, fourseven proposed bioretention facilities, and one proposed infiltration basin prior to discharging to the natural terrain. The development will result in no net increase in peak discharge from Basin 2 of ~~approximately 37.9 cubic feet per second (cfs).~~ The bioretention and infiltration facilities are design features that ~~will~~ mitigate any increase in runoff. ~~also~~In addition, the two larger bioretention facilities IMP ~~10.222A~~ and ~~2.062B~~ will be ~~larger and~~ designed to allow for more ponding to handle the increase in discharge. The bioretention and infiltration facilities are depicted on the Preliminary Grading Plan (Appendix V) and Tentative Map for the project (Figure 1-1).

Basin 3 (Frey Creek) begins northerly and easterly of the proposed site. Runoff from the hillsides flows toward the creek bed which runs southwesterly through the hills crossing the northern portion of the site and running south toward SR76 across the western side of the property. At SR76 a large bridge structure spans the creek with the deck approximately 20 feet above the creek bed. In the post development condition the characteristics of the basin will remain the same as in the pre-development condition with the exception of approximately 15 acres of the four square mile tributary basin will be developed with single family homes. The development will affect less than one percent of the total drainage shed. The lots will be designed with on-pad hydromodification basins and tree wells to treat and detain runoff generated from the driveways, homes, and pads.~~Three bioretention facilities are proposed for this tributary area to treat and detain runoff generated from the driveways, homes and existing groove areas.~~ The bioretention facilities are depicted in the PDS SWQMP (Appendix S) on the Tentative Map for the project ~~(Figure 1-1).~~

A quantification of pre- and post-development areas and flows at the project discharge points is detailed below:

	Basin 1	Basin 2	Basin 3
Pre-Development Area (acres or square miles)	152.8 acres	63.2 <u>54.3</u> acres	4.0 sq. miles

Pre-Development Q100 (cubic feet per second)	<u>108.8</u> 186.2 cfs	<u>38.7</u> 737.9 cfs	3003.1 cfs
Pre-Development Velocity (feet per second)	<u>6.97</u> 20.5 fps	<u>6.6</u> 21.8 fps	8.6 fps
Post-Development Area (acres)	<u>154.3</u> 456.4 acres	<u>62.8</u> 64.3 acres	4.0 sq. miles
Post-Development Q100 (cubic feet per second)	<u>69.3</u> 149.5 cfs	<u>25.6</u> 660.2	3003.1 cfs
Post-Development Velocity (feet per second)	<u>4.9</u> 19.4 fps	<u>5.1</u> 24.8 fps	8.6 fps

In summary, the development of this site will create an increase in total runoff discharging from the site. The construction of 816 bioretention facilities and two infiltration facilities and associated hydromodification improvements, proposed as project design features, will reduce any increase in runoff. As a result, there will be no net increase in peak runoff at the locations of the existing culverts crossing under SR76. All runoff discharging from the site across SR76 enters the San Luis Rey River south of SR76. Therefore, the project will not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site. Nor will the project result in increased velocities and peak flow rates exiting the project site that would cause flooding downstream or exceed the storm water drainage system capacity serving the site. Guidelines 1 and 3 are not exceeded and impacts are less than significant. No mitigation is required.

Analysis – Surface Water Elevation and Floodplain/Flood Hazards

Guideline 2:

The project contains a water course that is a tributary to the San Luis Rey River. As analyzed under Guidelines 1 and 3, above, the construction of 816 bioretention facilities and two infiltration basins will reduce any increase in runoff. There will be no net increase in peak runoff at the locations of the existing culverts crossing under SR76. All runoff discharging from the site across SR76 enters the San Luis Rey River south of SR76. Since site runoff quantities will not increase, the project will not add 2/10 of a foot or more in height to the surface elevation of the San Luis Rey River. Guideline 2 is not exceeded. Impacts are less than significant. No mitigation is required.

Guidelines 4 and 5:

The project will not place any housing, habitable structures or unanchored impediments in a 100-year floodplain area or other special flood hazard area as

shown on a FIRM, County Flood Plain Map or County Alluvial Fan Map. All proposed structures would be placed outside of any 100-year floodplains. Therefore, Guideline 4 is not exceeded and no impacts are identified. No mitigation is required. Similarly, the project would not place any structure within a 100-year flood hazards nor would the project alter the floodway in a manner that would redirect or impeded flows. Therefore, Guidelines 4 and 5 are not exceeded and impacts are less than significant. No mitigation is required.

Guideline 6

Seiche Analysis

An analysis of the potential for the project to have impacts related to seiche was also conducted. Based on the 1961 topographic map and as-built drawings, grading to create the reservoir mostly consisted of excavating a bowl-shaped cut area within the older Quaternary alluvial fan deposits. A fill slope bounds the reservoir on its west and south sides, as shown in Figure 2-7-2, "Topographic Maps of Existing Reservoir," and Figure 2-7-3, "Cross-sections of Reservoir." To evaluate seismic slope stability, screening analyses were performed. Representative cross sections through the reservoir were prepared based on the as-built survey drawing of the reservoir, and preliminary evaluations of slope stability were performed. Based on these analyses, it was determined the flat fill slopes bordering the reservoir are considered stable.

The reservoir was also studied for the possibility of slope instability and faulting. Trenches were dug to ascertain the presence or absence of faults in the area of the reservoir onsite. The trenches were dug into pre-Holocene alluvial fan deposits that did not appear to be displaced by a fault. Therefore the potential for fault rupture beneath the reservoir is low. Impacts due to seiche are not significant because the fill slope bounding the reservoir was found to be stable and the potential for fault rupture below the reservoir is low.

Assessment of Potential Reservoir Overtopping

Overtopping of the reservoir may be a potential effect as a result of seismic shaking from a local or distant earthquake. The natural hillside east of the reservoir is underlain by granitic rock, which if shaken by an earthquake, is unlikely to slide into the reservoir and create an overtopping wave.

However, the effects of seismic shaking on an enclosed body of water (like a lake or reservoir) could produce oscillation of the water surface, known as a seiche. The seiche is essentially like a standing wave, wherein the edges of the wave can slosh over, or overtop the enclosing banks. In this case, some of the water within the reservoir could slosh or run-up over the top the embankment. If enough water were to

slosh over the embankment, it could produce concentrated flows that could impact the proposed house pads some distance down slope from the reservoir.

The potential for seismic-induced overtopping is further reduced by the increased freeboard in the reservoir. Existing reservoir freeboard (about 5 feet) would significantly reduce potential seismic-induced overtopping. The top of the existing embankment is at approximate elevation 1,090 feet MSL, and is about 10 to 15 feet wide. With the new spillway (and the resulting lowered water level at 1,082.6 feet), the reservoir freeboard has been increased by about 3 feet, which increases the total freeboard to about 8 feet.

In order to evaluate potential overtopping flows, simplistic analyses were performed to estimate the potential height of a seiche, based on published literature (National Institute of Building Sciences 1997). The approach represents a simplified method to estimate the wave height of a seiche generated by seismic motion in a lake or other enclosed body of water. The analysis was performed to assess potential wave run-up resulting from a seiche. The predicted wave height estimated with the strong ground motion from an earthquake with a 500-year return is small, at about less than a centimeter high.

Therefore, the predicted low wave height, together with the increased freeboard indicates the likelihood of reservoir overtopping during an earthquake should be low. In summary, impacts related to seiche would not be an issue for this project and impacts are less than significant. No mitigation is required.

Hydromodification Analysis

A hydromodification analysis was prepared for the project and is included in the PDP ~~SWQMP Drainage Study~~ as Appendix SR to the DSEIR. The analysis summarized the approach used to design the tree wells, impervious dispersion areas, 846 bioretention cells, and two infiltration basins for the project. The analysis concluded that the design will satisfy both hydromodification and water quality requirements, and is based on San Diego Hydrology Model (SDHM) analysis ~~the sizing tables of the Final Hydromodification Management Plan (HMP) for San Diego County~~, as well as the water quality requirements established in the County of San Diego BMP DMSUSMP.

~~Bioretention cells with infiltration capabilities were chosen as the best Integrated Management Practice (IMP) option for the project, since they are one of the preferred treatment facilities in the SUSMP (together with infiltration devices);~~ Tree wells and impervious area dispersion were selected as Significant Site Design BMPs since the predominant Soil Type A of the area is conducive to design infiltration facilities. Bioretention basins and infiltration basins will also be used to meet hydromodification management requirements. To avoid potential contamination of potential groundwater resources in the vicinity of the project, the infiltration facilities

have an amended soil layer for biological treatment. For the ~~BMPs~~IMPs to be located in Soils Type B, the design of bioretention facilities will use natural infiltration beneath.

The summary of the design characteristics is included in ~~Attachment 8~~Table 4 of the ~~SWQMP~~hydromodification analysis (EIR Appendix SR). All ~~BMPs~~IMPs designed for the project satisfy both hydromodification and water quality compliance, ~~per the simplified methodologies of the HMP and SUSMP permits respectively.~~

Surface Water Quality

Guidelines for the Determination of Significance

The following significance guidelines are used to evaluate whether a significant impact related to surface water will occur as a result of project implementation according to the *County of San Diego Guidelines for Determining Significance, Surface Water Quality* (July 30, 2007).

- i. The project is a development project listed in County of San Diego, Code of Regulatory Ordinances (Regulatory Ordinances), Section 67.804(g), as amended and does not comply with the standards set forth in the County Stormwater Standards Manual, Regulatory Ordinances Section 67.813, as amended, or the Additional Requirements for Land Disturbance Activities set forth in Regulatory Ordinances, Section 67.
- j. The project would drain to a tributary of an impaired water body listed on the Clean Water Act Section 303(d) list, and will contribute substantial additional pollutant(s) for which the receiving water body is already impaired.
- k. The project would drain to a tributary of a drinking water reservoir and will contribute substantially more pollutant(s) than would normally runoff from the project site under natural conditions.
- l. The project will contribute pollution in excess of that allowed by applicable State or local water quality objectives or will cause or contribute to the degradation of beneficial uses.
- m. The project does not conform to applicable Federal, State or local “Clean Water” statutes or regulations including but not limited to the Federal Water Pollution Control Act, California Porter-Cologne Water Quality Control Act, and the County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance.

Analysis – Compliance with Regulations, Water Quality Objectives, Beneficial Uses

Guidelines 1, 4 and 5:

Detention basins are proposed to provide maximum water quality treatment for flows generated by the project. Post-development site flows will receive primary treatment through the incorporation of Low Impact Development (LID) and site design strategies. Such LID strategies are detailed in Tables 2 and 3 & in the SWQMP for the project (Appendix S of the DSEIR) and include:

- Conserving natural areas, soil and vegetation
- Minimizing disturbance to natural drainages
- Minimizing soil compaction
- Directing runoff from streets to natural or landscaped areas
- Pitching pavement and driveways towards landscaping
- Directing downspouts to swales or landscaping
- Reusing native soils and use of smart irrigation systems
- Minimizing slope erosion

The proposed bioretention ~~areas~~ and infiltration basins are sized to provide water quality treatment and detention for contributing watersheds. The outlet structure of a dual purpose basin (water quality and detention) will satisfy both the water quality and detention objectives, and will also allow the drawdown of the basin within 96~~72~~ hours in accordance with the County of San Diego Department of Environmental Health (DEH) regulations. The hydromodification analysis shows that the proposed detention basins will have adequate storage volume to capture the required treatment volume. In addition, results indicate that the proposed detention basins have drawdown times below 96~~ranging from 37 to 72~~ hours, which is below the requirements of DEH.

A ~~Major~~ Stormwater Quality Management Plan (Appendix S of the DSEIR) was prepared for the project. It proposes a range of both temporary and permanent Best Management Practices (BMPs) to address runoff pollution. Temporary construction BMPs include, but are not limited to:

- Use of silt fence and fiber rolls for storm drain inlet protection
- Storm drain inlet protection
- Solid waste management
- Stabilization of construction entrances and exits
- Use of desilting basins
- Use of gravel bag berms and sandbag barriers
- Proper material delivery and storage
- Spill prevention and control

- Concrete waste management
- ~~Implementation of water conservation practices~~

In addition to temporary construction BMPs, source control BMPs will be put in place for project operation. The source control BMPs are identified in Table 39 of the SWQMP and include, but are not limited to:

- On-site storm drain inlets will be marked
- Design of landscaping that will minimize irrigation and runoff, minimize the use of fertilizers and pesticides, retain/detain stormwater runoff, preservation of existing natural trees, shrubs and ground cover to the maximum extent possible.

As a result of the analysis that has been provided and the protections that will be incorporated into the design of the project, Guidelines 1, 4 and 5 are not exceeded. Impacts are less than significant and no mitigation is required.

Analysis – Impaired Water Bodies, Tributary to Drinking Water Reservoir *Guidelines 2 and 3:*

The nearest impaired body of water is the SLRR, which is ~~stressed by chloride~~ impaired for nitrogen, phosphorus, and indicator bacteria. This impairment is located ~~between the river's outflow to the Pacific Ocean and upstream (east) of Interstate 15 for an estimated distance of along the lower 13-35 miles of the river.~~ The project is located 19 miles upstream from the segment of the river that is impaired.

The project includes a comprehensive approach to water quality, including pre- and post-construction BMPs and the use of ~~168~~ bioretention basins and two infiltration basins which will provide natural filtration of water. In addition, an Assessment of Nitrogen Loading of Groundwater analysis was completed for the project (Appendix O). This report determined that the project would reduce nitrogen loading from the project site by 11 percent due to the reduction in agricultural land uses that require the application of fertilizer. Thus, the project would not contribute to the impairment of the SLRR.

Furthermore, the project does not drain to a tributary of a drinking water reservoir (there are no drinking water reservoirs located downstream on the SLRR). Therefore Guidelines 2 and 3 are not exceeded and impacts are less than significant. No mitigation is necessary.

3.1.4.3 Cumulative Impact Analysis

The cumulative analysis considers all of the cumulative projects listed in Table 1-1 and Figure 1-6. Of the 27 cumulative projects considered, Warner Ranch (GPA06-009) was noted as having a potential for runoff and altered drainage patterns. The suite of studies and design features specified will provide a full assessment of these

issues. Study requirements are typically included in project design documents such as the tentative map, plot plan, and conditions of approval. Cumulative projects have minimal impacts to drainage because the County of San Diego requires stormwater management plans for all projects. These plans allow applicants to identify potential impacts related to hydrology and water quality and correct them prior to project approval. The County has also adopted a range of regulations that control both water quantity and quality issues. These include the San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance, regulations related to Low Impact Development (LID), and hydromodification. Development projects are required to adhere to these regulations, thus minimizing their contribution to a potential cumulative impact. In summary, the Proposed Project will not result in a significant contribution to cumulative impacts for the issue of hydrology and water quality and impacts are less than significant. No mitigation is required.

3.1.4.4 Conclusion

Hydrology, stormwater and water quality effects have been assessed by State-registered civil engineers. Guidelines were established for the project. The hydrology assessment determined that, as proposed, the development of the site will not contribute a significant increase to the runoff from the site. The design of the bioretention and infiltration features was found to be adequate to address any additional drainage effects resulting from the project's increase in impervious surface. The bioretention and infiltration features are also adequate for meeting hydromodification requirements. No structures will be located in a floodway or flood hazard area. As a result, flooding or erosion impacts from the project are less than significant. Water quality impacts would be less than significant because the project proposes bioretention features which will act as a filter to most pollutants captured in surface water flows. The project also implements BMPs during construction and operation to further minimize impacts to water quality. Cumulative hydrology and water quality impacts are less than significant because other projects in the area did not have significant hydrological effects, and regulations implemented by the County have been effective in reducing development impacts to hydrologic regime and water quality. None of the guidelines for the project are exceeded and impacts are less than significant. No mitigation is required.

3.1.5 Land Use and Community Character

3.1.5.1 Existing Conditions

The Proposed Project qualifies as a pipelined project under the rules adopted for the Current General Plan by the Board of Supervisors in 2003. As such it is evaluated

under the general plan in effect prior to August 3, 2011 and is referred to in the DEIR as the previous General Plan (GP).

The project is within the Semi-Rural Residential (SR-10) Land (RL) Use Designation of the current General Plan, with a minimum lot size of 40 acres (RL-40) density of one dwelling unit per 10 acres. Zoning is A 70 (4 acres). The project is grandfathered under the rules adopted by the Board of Supervisors when the current general plan was being formulated. Under the previous General Plan, the 248.26-acre site is within the General Plan regional category of Estate Development Area (EDA) and has a Land Use Designation of (19) Intensive Agriculture on the Pala/Pauma Subregional Plan map. EDA combines agriculture and low density residential uses, allowing parcel sizes of two to twenty acres. Clustering is permitted in the EDA. The (19) Intensive Agriculture designation promotes a variety of agricultural uses including minor commercial, industrial and public facility uses appropriate to agricultural operations or supportive of the agricultural population. This designation permits two, four, and eight acre parcels provided specific findings can be made. The site is currently zoned A70, with a four-acre minimum lot size. A70 is a limited agricultural use zone that is intended to create and preserve areas intended primarily for agricultural crop production. Family residential use is permitted in the A70 zone. A Planned Residential Development (PRD) is proposed to allow two-acre minimum lot sizes. A PRD is designed to permit a more creative or imaginative design for a project than might be allowed under conventional zoning regulations, one of which will result in more economical and efficient use of the land while providing a higher level of amenities and open space. A PRD is regulated by the County of San Diego Zoning Ordinance and is allowed with a Major Use Permit (MUP).

The community character of the area is rural residential, and agricultural. The region is sparsely populated and land uses consist of rural residences on large lots, agriculture, and undeveloped land.

The aerial photograph, Figure S-2, provides an overview of uses in the vicinity. Immediately east of the project are active citrus groves and scattered residences. Figure 1-5, "Land Use Map," provides an overview of nearby land uses. The Adams Drive community is located across Adams Drive in this direction and consists of rural residences on lots varying in size from one and a half acres and larger, often with a mix of agricultural uses. Agriculture in the area consists largely of groves of citrus and avocado, with some specialty crops, horse keeping, and apiary activity evident. The Pauma Indian Reservation is adjacent to the site on the northeast, and is undeveloped in this vicinity. Large groves of citrus are located to the west and northwest. An isolated undeveloped "island" of the Pala Indian Reservation is located immediately west of the site. Additional "islands" of undeveloped land are located farther to the west and northwest. The San Luis Rey River is located approximately

0.12 miles to the south. Scattered residences on large lots are located between the project and the river. Wilderness Gardens Preserve, a County park with four miles of hiking trails, is located southeast of the site.

The main Pala community is approximately 4.25 miles west of the site and is dominated by the Pala Casino, which includes a hotel, gas station and related commercial services such as restaurants and fast food outlets. The community consists largely of residences on smaller lots, limited commercial services, and a church. A fire station is also located there. The Pauma community is approximately three miles southeast of the project. The community consists of outlying residences, public services such as a fire station and the Yuima Municipal Water district office, small businesses such as agricultural service companies, grocery stores and cafes.

3.1.5.2 Analysis of Project Effects and Determination as to Significance

Guidelines for the Determination of Significance

The following significance thresholds are from Appendix G of the State CEQA Guidelines. The Appendix G threshold pertaining to potential conflicts with a habitat conservation plan or natural community conservation plan is addressed in Chapter 2.3 of this DEIR. The project would have a significant effect on land use or community character if it would:

1. Conflicts with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect
2. Physically divides an established community

Analysis – Applicable Land Use Plans/Policies

Guideline 1: A detailed review was carried out of relevant planning documents consisting of the previous San Diego County General Plan (GP), the Zoning Ordinance of San Diego County, the Resource Protection Ordinance (RPO), and the Pala/Pauma Subregional Plan.

The Scenic Element of the GP has designated portions of SR76 as a scenic highway, but the segment that passes in front of the project is not included in this designation. A component of the Noise Element is addressed in the noise analysis, where mitigation is proposed to ensure that the project remains consistent with the General Plan.

GP, Zoning Ordinance, RPO

Density is controlled by three regulations: the GP, the Zoning Ordinance, and, in cases where steep slopes are present, the Resource Protection Ordinance (RPO). Under the (19) Intensive Agriculture discussion in the Land Use Element of the GP,

density is determined on the basis of slope. In computing the theoretical maximum number of dwelling units, the GP allows 0.25 DU/acre (gross) where the average slope does not exceed 25 percent. The average slope for the Proposed Project is 23.6 percent, which meets the GP requirement. Based on this, the theoretical yield of the site is 62 dwelling units.

The Zoning Ordinance Section 6621 describes the means of calculating maximum density under a planned development. In the case of a residential development such as the Proposed Project, the entire project area is considered, excluding any rights of way of public streets or highways. This would allow approximately 242 of the site's 248 acres to be used in the density calculation. The applicable density designator for the site is 0.25 DU/Acre, resulting in a maximum allowed number of 60 dwelling units.

The Resource Protection Ordinance (RPO) also has a density formula that applies to sites with steep slopes. The RPO is designed to protect sensitive resources, steep slopes, floodplains, and cultural resources in San Diego County. RPO slope classifications allow varying densities, as follows:

0 – 25%	4 acre/DU
25% +	8 acre/DU

Based on the RPO slope analysis done for the project site, 53 residential lots are allowed, with the breakdown as follows:

0 – 25%	180.8 ac = 45DU
25% +	66.7 ac = 8 DU

In summary, allowed densities are 62 DU, 60 DU, and 53 DU, respectively. In all cases the project's proposed 44 lots fall well below the allowed density maximums.

Minimum parcel size is governed by the GP and the Zoning Ordinance. The GP allows four acre lot sizes based on the 0.25 DU/acre density discussed above. Lot size under the A70 zone is also four acres. However, two-acre parcels are allowed with approval of a MUP for a Planned Residential Development (PRD). Section 6624 of the Zoning Ordinance specifies that within a planned development, "the minimum lot size shall be 50 percent of the minimum lot size requirement of the applicable zone" provided the GP lot size requirement is satisfied. That is in this case two acres.

Clustering is permitted within the EDA (Policy 1.3, Land Use Element, pre-August 2011 General Plan). Clustering in this context refers to the grouping of lots through the on-site transfer of density rather than the lots being distributed evenly throughout the site. The total number of dwelling units in a clustered development will not

exceed the number of units allowed under the applicable land use designation and zoning.

Several standards apply to a planned development:

1. At least 40 percent of the project must be in a permanent open space easement
2. No more than one dwelling unit, with permitted accessory structures, shall be permitted on any lot
3. The minimum parcel size of all parcels not served by sewers, or a package treatment plant, is at least one acre. In areas where the predominant slope exceeds 25 percent grade, no lot shall be smaller than four acres
4. Where groundwater is the sole source of water supply, proof of a long-term groundwater supply is provided consistent with the County Groundwater Ordinance.
5. The project will not have a more significant environmental effect than would an equivalent non-clustered development
6. The project conforms to any additional criteria, standards or limitations which may be required by the applicable community or subregional plan.

The Proposed Project is consistent with the clustering provisions of the EDA. The number of units proposed does not exceed the number of units allowed under the GP. Permanent open space equaling ~~146.3~~138.4 acres (~~58-56~~ percent of the site) is being provided. Only one dwelling unit per lot is proposed. The predominant slope on the site is under 25 percent. Proof of long term water supply is provided in the form of a service letter from YMWD. The clustered project density allows preservation of biological resources, an agricultural lot, and a recreation lot that would not be possible if development was spread evenly over the site. The Proposed Project conforms to the criteria of the Pala/Pauma Subregional Plan.

Clustering is permitted with the (19) Intensive Agriculture designation (Policy 2.5, Land Use Element, pre-August 2011 General Plan). The theoretical maximum number of dwelling units allowed depends on slope. Where the site's average slope does not exceed 25 percent, 0.25 DU per gross acre are permitted. A slope analysis for the project indicates the average slope is 23.6 percent, which is below the 25 percent maximum. Therefore the 0.25 DU is allowed.

Sections 5800 --5849 and 6600 -- 6699 of the San Diego County Zoning Ordinance define and implement planned development requirements. Section 5804 requires a MUP to implement a planned development. A MUP has been prepared for the project and more open space and amenities are provided than would be possible with a non-clustered development.

Sections 6600 – 6699, entitled “Planned Development Standards,” carry out the intent of Section 5800 and set forth development standards that must be met before a MUP is granted. Section 6606 calls for the project to be “planned and developed as a whole” in a way that defines location of structures, circulation patterns, parking, open space, and utilities. A MUP plot plan has been prepared for the project that presents these details.

Section 6618, “General Development Criteria,” call for compatibility with existing and potential residential development in the vicinity. Additionally, a PRD shall relate harmoniously with its natural setting. The minimum two-acre lot size is consistent with existing lot sizes in the area because it allows for a residence and the retention of an agricultural component. The Proposed Project has been designed to buffer existing uses with agriculture. Additionally, natural features such as Frey Creek, rock outcroppings, and existing agriculture are preserved. The Proposed Project is consistent with existing residential land uses because it maintains the rural character of the area.

Section 6624 states the minimum lot size shall be 50 percent of the minimum lot size requirement of the applicable zone. The existing A70 zone for the site requires a four-acre minimum lot size. Therefore the two-acre parcels proposed are consistent with this provision.

Section 6648, entitled “Open Space,” details the open space requirement of the planned development. Open space shall comprise at least 40 percent of the total land area. Open space for the Proposed Project consists of ~~146.25~~138.4 acres of biological, agricultural, and recreational area. This amounts to 56 percent of the site, which exceeds the 40 percent requirement.

In summary the Proposed Project meets the requirements for two-acre lots in a cluster development in conformance with a Planned Residential Development.

Section 7358 of the Zoning Ordinance details the findings that must be made before a use permit may be granted or modified.

1. That the location, size, design, and operating characteristics of the proposed use will be compatible with adjacent uses, residents, buildings, or structures, with consideration given to:
 - a. Harmony in scale, bulk, coverage and density;
 - b. The availability of public facilities, services and utilities;
 - c. The harmful effect, if any, upon desirable neighborhood character;
 - d. The generation of traffic and the capacity and physical character of surrounding streets;

- e. The suitability of the site for the type and intensity of use or development which is proposed, and to
 - f. Any other relevant impact of the proposed use; and
- 2. That the impacts, as described in paragraph “a” of this section, and the location of the proposed use will be consistent with the San Diego General Plan.
 - 3. That the requirements of the California Environmental Quality Act have been complied with.

The Proposed Project’s location, size, design, and operating characteristics are engineered to be compatible with the surrounding community. The project proposes lot sizes and uses that are compatible with an existing residential neighborhood immediately to the east. While the project is clustering to create more open space and an agricultural use area, lot sizes are still large, ranging in size from 2.0 to 5.4 acres. Lots along SR76 are larger, ranging in size from 2.74 to 5.4 acres. The project is designed to preserve characteristics that harmonize with the existing community. These include an agricultural open space lot, a visual buffer along SR76, and an impact neutral oak grove that extends from SR76 to the interior of the property. In addition, groves outside of the roads, pads and driveways will be retained on individual lots so they are available for the continuation of agriculture.

The scale of the project, with ~~43~~44 new residential lots, is modest. Lot sizes in the community to the east are mixed, with many lots larger than and smaller than two acres. The project’s residential uses are buffered from existing residential areas by open space and agricultural open space that will be preserved in perpetuity.

Public facilities are available, as indicated by service letters obtained for the project. Annexation to the YMWD for water ~~and fire protection~~ services is a part of the project application and project construction will not go forward until this process is complete. The neighborhood character in the area consists of rural residential uses, many with an agricultural component. The Proposed Project maintains this by providing large lots upon which agriculture can continue, a visual buffer along SR 76, and an agricultural area where agriculture will continue. The site is well suited for the use proposed because the area is relatively flat and requires minimal grading. It is located near a developed neighborhood and therefore compliments existing use patterns. All environmental impacts of the proposed project have been evaluated and will be fully mitigated, except for impacts to Mineral Resources, in accordance to the measures specified in this DEIR.

Impacts and project location are consistent with the previous General Plan, as discussed above. CEQA has been complied with by preparing this DEIR in

accordance with the *CEQA Guidelines* and the County of San Diego *Environmental Impact Report Format and General Content Requirements* (September 26, 2006).

LAFCO will use the DEIR in reviewing the project annexation to MWD, CWA, and YMWD. LAFCO has adopted Legislative Policy L-101, "Preservation of Open Space and Agricultural Lands," to further the policies and priorities of the Cortese-Know-Hertzberg Local Government Reorganization Act of 2000 regarding the preservation of open space and prime agricultural lands. LAFCO is 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. Policy L-101 uses "prime agricultural lands" as the focus for its evaluation criteria. The project site does not support prime agricultural land. The agricultural evaluation for the project has determined that there are no prime agricultural soils on the Shadow Run Ranch project site and there is no Prime Farmland or Farmland of Statewide Importance on the site. In addition, the LARA analysis of the project determined the site is not an important agricultural resource.

The Proposed Project creates a 39.1-acre agricultural lot that will be protected by easement and will be professionally managed. The Proposed Project also creates a 91.73-acre biological open space lot that preserves the site's most sensitive biological resources. This includes the on-site portion of Frey Creek, which is an important wildlife movement corridor in the area.

In summary, the project does not support prime agricultural lands, prime soils, or Prime Farmland or Farmland of Statewide importance. Additionally agriculture is preserved in perpetuity on 39.1 acres. Additional biological open space areas are provided to protect the sensitive habitat areas onsite. For these reasons, the project is consistent with LAFCO Policy L-101.

The project residential area will be annexed into the MWD, CWA, and YMWD for potable water service. Three boundary adjusted lots totaling 16.99 acres and three two adjacent offsite parcels (APN 111-080-14, -16, -17 and -20) totalling 13.38 40.46 acres located east of the project will also be annexed. These parcels are owned by the applicant. The Proposed Project is adjacent to the YMWD boundary and as such with the annexation of the off-site parcels, no "islands" or "windows" will be created as a result of annexation. Figure 1-7, "Yuima Municipal Water District Boundary," shows an overview of the area and Figure 1-8, "Annexation Areas," shows the existing and proposed boundary in detail. The project and off-site lots will also annex into the YMWD sphere of influence.

YMWD, ~~unique among San Diego County Water Authority member agencies,~~ relies on local water supplies for 30 to in excess of 60% of its retail deliveries. As a part of its local water portfolio, YMWD presently purchases local groundwater from offsite wells owned by the project applicant. ~~The fact that the subject site will continue to be a net exporter of groundwater to Yuima is a basis for Yuima's position that simultaneous annexation of the subject parcels into the SDCWA and Met is not required.~~ and will continue to do so after the project is complete. The proposed project will annex to MWD and CWA as well as YMWD so that imported potable water would be available to project residents.

If the project is approved and the DEIR is certified by the County Board of Supervisors, the Project will be required to obtain LAFCO approval of the annexation. A synopsis of the annexation process is included as Attachment ~~B-A~~ Appendix P of the DEIR.

The project proposes annexation of its residential area to the MWD, CWA, and YMWD only for its potable water supply. Water for irrigation will be provided by the applicant using existing wells on the project site and a parallel “purple pipe” type piping system. Hookups for both systems will be in roadway right of way to facilitate maintenance.

This dual approach will reduce the total amount of potable water required to serve the project because irrigation typically constitutes over 50 percent of the water demand of a household according to the CWA. ^H~~YMWD uses a mix of imported and locally supplied water. Reserving potable water for residential use only, the water requirement from YMWD is reduced.~~

Pala/Pauma Subregional Plan

Because the Proposed Project is pipelined under the previous GP, the previous Pala/Pauma Subregional Plan as amended May 7, 1986, provides the goals and policies for projects within the region.

Chapter 1, Land Use, A. Land Use Goal of the Pala/Pauma Subregional Plan calls for “orderly planned growth that is provided as needs arise and essential services such as water, sewer, fire protection, and schools are made available.” The project proposes annexation to the YMWD for the provision of potable water. The YMWD already encompasses areas east and west of the project site, so annexation will fill a gap in the service area. Currently the project provides its own irrigation water via several groundwater wells and will continue to do so for the proposed agricultural open space area and for individual lots to meet their irrigation water needs. The provision of groundwater for irrigation purposes will reduce demand for YMWD water while continuing to make use of the groundwater resources for the continuation of agriculture, thereby making efficient use of this resource. Sewer services will be

provided on site by septic systems. The Department of Environmental Health has reviewed and approved the septic system layouts. Growth inducement was evaluated for the project in Section 1.8. The project is consistent with community growth projections and provides a measured extension of services adequate to serve the project. Therefore the project proposal represents orderly development where growth is not induced and public services are being provided in a rational way.

~~The project will annex to the YMWD for fire service. Although~~ Fire protection service is available ~~on an as needed basis~~ from Calfire through CSA 135, annexation and will ensure a safe level of service for new residents. Local school services are readily available. ~~The annexation represents orderly planned growth because the project takes advantage of a logical extension of YMWD services, or, in the case of sewer service, provides its own service.~~

Chapter 1, Policy 7 of the plan recognizes that avocational agriculture is a compatible secondary use of land throughout the subregion.

One of the project's stated objectives is to preserve the site's agricultural resources by providing an ongoing agricultural use. The project design includes retention of 39.1 acres of agriculture within a conservation easement. This grove will belong to and will be managed by the HOA. Professional managers will be retained to ensure good stewardship and compliance with County policies and ordinances.

Groves on individual lots will be retained except where grading is necessary for house pads, roads, and driveways. This area will be approximately 67 acres. Initially the groves on individual lots will be managed by the HOA unless individual lot owners opt to use another service. In either case the HOA regulations will require appropriate management of the resource. A non-potable water source will be provided to each residential lot by the applicant.

Chapter 3, Public Services and Facilities, Policy 2, states that, wherever feasible, projects should provide public water service to those areas of the plan expected to experience residential growth, particularly within the country town area.

One of the Proposed Project's major components is the amendment of the Yuima Municipal Water District (YMWD) sphere of influence to include the project site, three boundary adjusted lots and three off-site lots. A Water Service Letter is provided in Attachment A to this DEIR indicating YMWD can accommodate this annexation. The applicant also proposes to provide water for irrigation to each resident, thereby reducing the need for potable water. This water is sources locally, reducing the need for importation of water.

The project conforms to the GP, the Zoning Ordinance of San Diego County, the RPO, and to the Pala/Pauma Subregional Plan. Guideline 1 is not exceeded and impacts are less than significant. No mitigation is required.

Analysis - Guideline 2: Physically divides an established community.

The project will develop 44 residential lots with a minimum size of two acres. Lots will be designed to preserve existing grove agriculture to the greatest extent possible. Grading will be restricted to pads, roads, and driveways. A non-potable water system will be provided to support irrigation of the groves on individual lots. This design duplicates a residential/agricultural pattern that is common in San Diego County, and in the immediate area.

The ~~Proposed~~ Project is proposed adjacent to large groves and an established neighborhood east of Adams Drive that consists of single family residences on lots of 1.15 acres and larger, many of which also have an agricultural component. Due to the retention of agriculture, the site does not disrupt the continuity between largely agricultural areas on the west and the residential lots with agriculture on the east. Both use types are supported by the project.

~~The flavor~~ A sense of the neighborhood is provided by the following series of community character photographs. The location and vantage points of the photographs is shown on Figure 3-1-3, "Index to Community Character Photographs".

Figure 3-1-4, "Vicinity Photographs 1 and 2"

Photograph 1 is taken from a point southeast of the proposed site on Adams Drive looking southeast from the project at an accessory use on a typical residential lot. The view is of an outbuilding common to the area. The edge of an agricultural grove is seen on the left. Photograph 2 is taken from Adams Drive at a point southeast of the proposed site and looks southeast toward a typical residential lot. This type of single story ranch design is common to the area. This lot indicates mature landscaping and an existing grove surrounding the residence.

Figure 3-1-5, "Vicinity Photograph 3"

Photograph 3 is taken from a higher elevation along Adams Drive looking southwest over the existing neighborhood. The residence appears to be a double-wide mobile home on a permanent installation, indicating the diverse character of residences found in the area. This lot shows the screening effect of even sparse landscaping. The adjacent lot on the right is obscured by groupings of trees, indicating that private lot landscaping is common and is effective in maintaining a rural setting. More densely developed parts of the neighborhood are seen in the distance on the left.

Figure 3-1-6, "Vicinity Photograph 4"

Photograph 4 is taken from SR76, looking north toward an existing large lot. Home sites are visible on the ridge in the middle ground. Natural vegetation and landscaping screen the use in the foreground left from view. Agricultural groves and landscaping are seen on the ridge crest and on the right side of the photo.

An aerial view of the neighborhood (Figure 3-1-7, “Aerial View of Neighborhood.”) shows the existing lots and their areas. As shown in the community photographs and on the aerial, the use pattern in the neighborhood is fairly consistently a mix of residential and agricultural uses. Most of the lots in the area, regardless of size, have a portion of their lot devoted to agriculture. The proposed mixed use on project lots is consistent with existing uses in the area because the mixed use approach is common on both the existing and proposed lots.

The surrounding land uses adjacent to the project are of two types. Immediately west and east are large lots supporting active groves (See Figure S-2, “Aerial Photo”). The project proposes large lots adjacent to these uses: a 91.73-acre biological open space easement on the west and a 33.64-acre agricultural open space easement on the east. This design will buffer existing uses and create a consistent transition between on- and off-site uses.

The development pattern in the neighborhood east of Adams Drive is largely irregular, as shown on Figure 3-1-7, “Adjacent Neighborhood on Aerial Photograph.” The pattern varies from large lots with a single family residence and a large grove, with smaller lots interspersed. Lots become more regular as one moves south along SR76. Lot sizes vary from 0.99 to 19.87 acres, with 18 lots (34%) less than two acres in size, while four lots (seven percent) are over 8 acres. Lot patterns on the project site will be more regular, with residential lot sizes varying from 2.01 to 5.40 acres. The overall pattern is shown on Figure 1-1, “Tentative Map.” The pattern shows a variation in lot shape in the north that is similar to the adjacent neighborhood, with irregular lot shapes. The more regular pattern in the south of the project site is broken by the arroyo that will be preserved in impact-neutral biological open space. Additionally the retention of trees on individual lots and along the project frontage will obscure the uniformity of lot sizes in the south. The overall effect will be of a large grove area similar in character to adjacent areas.

The project design preserves the character of the area by proposing a mixed residential/agricultural use that is similar to existing patterns. Development design differences between the project and existing neighboring properties are minimized by the transitional lot size design proposed, the varied pattern between the north and south of the site, and the retention of natural features and groves that blends the development pattern. Guideline 2 is not exceeded and impacts are less than significant. No mitigation is proposed.

3.1.5.3 Cumulative Impacts Analysis

The cumulative study area consists of all areas along SR 76 between Pala and Pauma. The study area was chosen because it shares common characteristics, such as reliance on SR76, rural land uses, agricultural uses, and limited commercial uses. Additionally, the Pala/Pauma area is defined as having its own special character by the Pala/Pauma subregional Plan.

One project within the study area, AP 11-037 Sol Orchard San Diego 5, LLC, was found to have potential impacts to Land Use. AP 11-037 proposes a 15-acre solar generating facility that will produce electric power during daytime hours. The project is located in the Adams Drive neighborhood, indicated as number 21 on Figure 1-6, “Cumulative projects in Study Area.” It represents a land use not presently existing in the surrounding neighbourhood. However, the project mitigates for impacts by providing a reclamation plan after the use expires. Significant impacts are fully mitigated and do not contribute to a cumulative effect.

Because the one project in the Proposed Project’s cumulative study area with impacts to Land Use is required to restore the site, it will not result in long-term or significant impacts. Shadow Run Ranch does not create any project-level impacts to Land Use and Community Character. Therefore, neither of the projects alone or combined will contribute to a cumulatively significant effect. Impacts are less than significant, and no mitigation is required.

3.1.5.4 Conclusions

The proposed Shadow Run Ranch project qualifies as a pipelined project, and analysis of conformance with applicable regulations concerning Land Use and Community Character was analyzed by reviewing applicable provisions from the previous GP, the Zoning Ordinance of San Diego County, the RPO, and the previous Pala/Pauma Subregional Plan. A photographic analysis, including aerial photographs, was used to evaluate the character of the surrounding community.

The project site has a GP Regional Category of EDA, a land use designation of (19) Intensive Agriculture, and is zoned A70. A PRD is proposed for the project, which is allowed with an MUP within the EDA.

The analysis found the Proposed Project to be consistent with existing zoning and PRD requirements because the clustered design preserves extensive open space areas and meets open space allocation requirements. The project design was analyzed for proposed use patterns, lot size, and development patterns and was found to be consistent with the surrounding area in these respects.

A cumulative study was performed, finding one project within the study area which could have potential impacts to Land Use. Because that project provides mitigation to

reduce all impacts to below a level of significant, and because the Proposed Project does not result in any significant impacts, no cumulative effect to land use and community character are anticipated.

The project has no land use or cumulative community character effects. No guidelines are exceeded and impacts are less than significant. No mitigation is required.

3.1.6 Utilities and Service Systems

A Water Supply Assessment entitled “SB 610 Water Supply Assessment Shadow Run Ranch Project,” (February 3, 2012) was prepared by Yuima Municipal Water District (YNWD). The complete report is included as Appendix P.

3.1.6.1 *Existing Conditions*

Existing water infrastructure on the site is limited to wells and irrigation lines to serve agricultural uses along with a primary residence, caretaker residence, barns, offices, and other buildings related to the farming enterprise. Limited septic systems are sent for two onsite residences. Power is currently available on the site.

3.1.6.2 *Analysis of Project Effects and Determination as to Significance*

Guidelines for the Determination of Significance

The following significance thresholds are from Appendix G of the State CEQA Guidelines. The project would have a significant effect if it would:

1. If there would not be sufficient water supplies available to serve the project from existing entitlements and resources.
2. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?

Analysis – Water Supply

Guideline 1:

The project residential area will be annexed ~~proposes annexation~~ to the MWD, CWA, and YMWD for its potable water supply. YMWD has provided a service letter (Attachment A) indicating they have adequate resources available to serve the project.

Water for irrigation will be provided by the applicant using existing wells on the project site. This approach will reduce the total amount of imported water required to

serve the project because irrigation typically constitutes over 50 percent of the water demand of a household according to the County Water Authority. YMWD uses a mix of imported and locally supplied water. Reserving potable water for residential use only, the ability of YMWD to supply the project from its local water resources is not impaired.

YMWD, ~~unique among San Diego County Water Authority (SDCWA) member agencies,~~ relies on local water supplies for approximately 30 to 60 percent ~~in excess of 60%~~ of its retail deliveries. As a part of its local water portfolio, YMWD presently purchases local groundwater from offsite wells owned by the subject property project site owner and will continue to do so after the project is complete. The proposed project will annex to MWD and CWA as well as YMWD so that imported potable water would be available to residents. ~~The fact that the subject site, when fully developed, will continue to be a net exporter of groundwater to Yuima is a basis for Yuima's position that simultaneous annexation of the subject parcels into the SDCWA and Metropolitan Water District (MWD) is not required~~

With regard to adequate water supply for the project, the assessment of water demand ~~Water Supply Assessment (YMWD, 2012)~~ for the project (DEIR Appendix P) concluded that, ~~based on the supply reliability data included in YMWD's 2010 Master Plan as supplemented, it appears that YMWD would still be able to provide sufficient domestic supply under varying conditions including during the most limiting single dry water year condition.~~ The Proposed Project demand was estimated to be the project would use approximately 22395-acre feet per year (afy) of potable water from the YMWD, which would constitute a small n-approximate 3.0 to 5.5 percent increase in YMWD's projected demand for 2030. Annexation to MWD, CWA as well as YMWD will further ensure adequate supplies of water by allowing the project to access and use imported water. No potable water will be provided to either the boundary adjusted lots (Aprcels A, B, and D) or the three off-site legal lots being annexed. However, one of the offsite lots supports a residence so it is reasonable to expect that this lot owner will pursue a potable water hook-up after annexation. Additional potable water use of 0.5 AFY can be predicted. Combined with project use of 22 AFY, 22.5 AFY continues to represent a small increase in water demand and is within project water use for 2030 by YMWD. Because YMWD is currently projecting water demands well below the available supplies, it can be concluded that YMWD's public water system will have sufficient supplies to satisfy the demands of the Project, in addition to existing and planned future uses. Therefore, the project does not exceed Guideline 1 and impacts are less than significant. No mitigation is required.

Analysis - Water Facilities

Guideline 2:

~~According to the Water Supply Assessment (YMWD, 2012), the,~~ The project will necessitate the construction of additional water distribution infrastructure within the project area to serve the proposed residential uses.

Proposed water infrastructure improvements are shown on Figure 1-3 “Water Circulation and Well Locations.” A water line to carry potable water will be placed within the proposed roadways of the project to provide potable water to the future residential lots. The water line will connect to the existing water infrastructures within SR76 and will access the site at the main project entrance, located at SR 76 and Haas Grove Lane. Impacts of construction of the water infrastructures have been considered as part of this DEIR. Besides the water infrastructure improvements noted above, no other improvements for potable water are required to serve the project.

Wastewater Facilities

Sewer service will be provided via individual septic systems on each lot. The project site has been evaluated for appropriate soil types and system design, and septic systems have been designed for each lot. Septic designs have been submitted to the County of San Diego Department of Environmental Health (DEH) for review and approval. These are shown on the grading plan for the project. The project will not require offsite conveyance or treatment of wastewater, nor will the project require the expansion or existing wastewater facilities.

In summary, the project does not result in significant environmental effects due to the construction of new water or wastewater treatment facilities or expansion of existing facilities. Guideline 2 is not exceeded and impacts are less than significant. No mitigation is required.

3.1.6.3 Cumulative Impacts Analysis

The cumulative analysis considers all of the cumulative projects listed in Table 1-1 and Figure 1-6. Of the 27 cumulative projects considered none of the cumulative projects were identified as having impacts related to water supply or water/wastewater infrastructure. Further, the Water Supply Assessment for the project concluded that because both YMWD and the SDCWA are currently projecting water demands well below the available supplies, it can be concluded that YMWD’s public water system will have sufficient supplies to satisfy the demands of the Project, in addition to existing and planned future uses. Therefore, no cumulative impacts are less than significant and no mitigation is required.

3.1.6.4 Conclusion

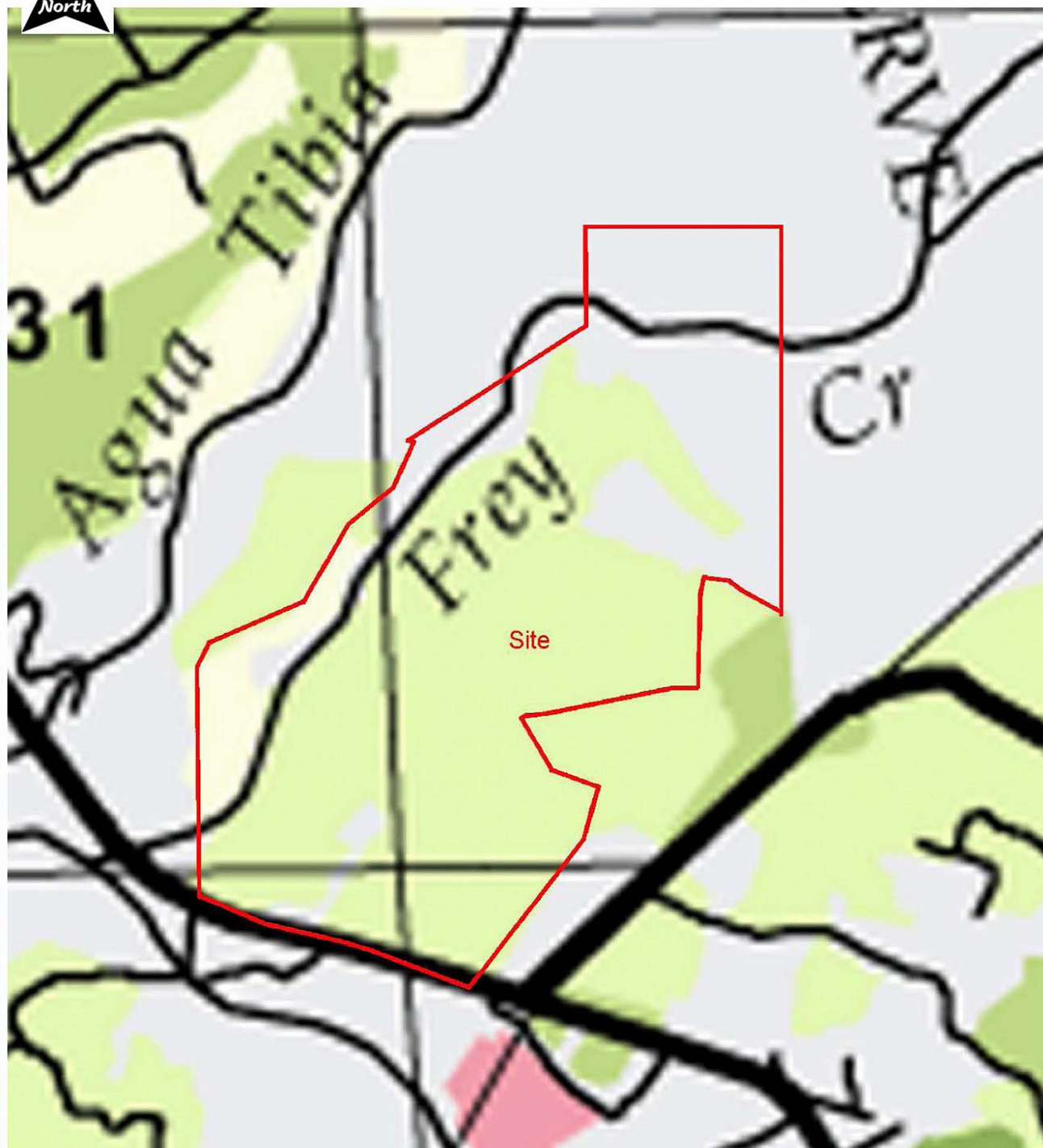
An assessment of water supply ~~Water Supply Assessment~~ was prepared for the project by ~~YMWD~~ and it concluded that YMWD has adequate supplies to serve the

potable water needs for the 44 residential lots. Well water will be used for ongoing irrigation of the agricultural uses.

The project proposes onsite water infrastructure to serve the future residences and the water system will tie into the existing infrastructure within SR76 via Adams Drive. The project does not require any sewer connections as onsite septic systems are proposed for each residential lots. Thus, impacts related to expansion of water and wastewater infrastructure were determined to be less than significant. Cumulative impacts were also determined to be less than significant. No mitigation is required.

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PRIME FARMLAND

LAND WITH THE BEST COMBINATION OF PHYSICAL AND CHEMICAL CHARACTERISTICS ABLE TO SUSTAIN LONG TERM PRODUCTION OF AGRICULTURAL CROPS. THIS LAND MUST HAVE BEEN USED FOR PRODUCTION OF IRRIGATED CROPS AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.



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. THIS LAND MUST HAVE BEEN USED FOR PRODUCTION OF IRRIGATED CROPS AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.



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 NONIRRIGATED FRUITS AND VEGETABLES AS FOUND IN SOME CLIMATIC ZONES IN CALIFORNIA.



FARMLAND OF LOCAL IMPORTANCE

LAND THAT MEETS ALL THE CHARACTERISTICS OF PRIME AND STATEWIDE, WITH THE EXCEPTION OF IRRIGATION.
FARMLANDS NOT COVERED BY THE ABOVE CATEGORIES BUT ARE OF SIGNIFICANT ECONOMIC IMPORTANCE TO THE COUNTY. THEY HAVE A HISTORY OF GOOD PRODUCTION FOR LOCALLY ADAPTED CROPS. THE SOILS ARE GROUPED IN TYPES THAT ARE SUITABLE FOR TRUCK CROPS (SUCH AS TOMATOES, STRAWBERRIES, CUCUMBERS, POTATOES, CELERY, SQUASH, ROMAINE LETTUCE, AND CAULIFLOWER) AND SOILS SUITED FOR ORCHARD CROPS (AVOCADOS AND CITRUS).



GRAZING LAND

LAND ON WHICH THE EXISTING VEGETATION IS SUITABLE FOR GRAZING OF LIVESTOCK. THE MINIMUM MAPPING UNIT FOR THIS CATEGORY IS 40 ACRES.



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

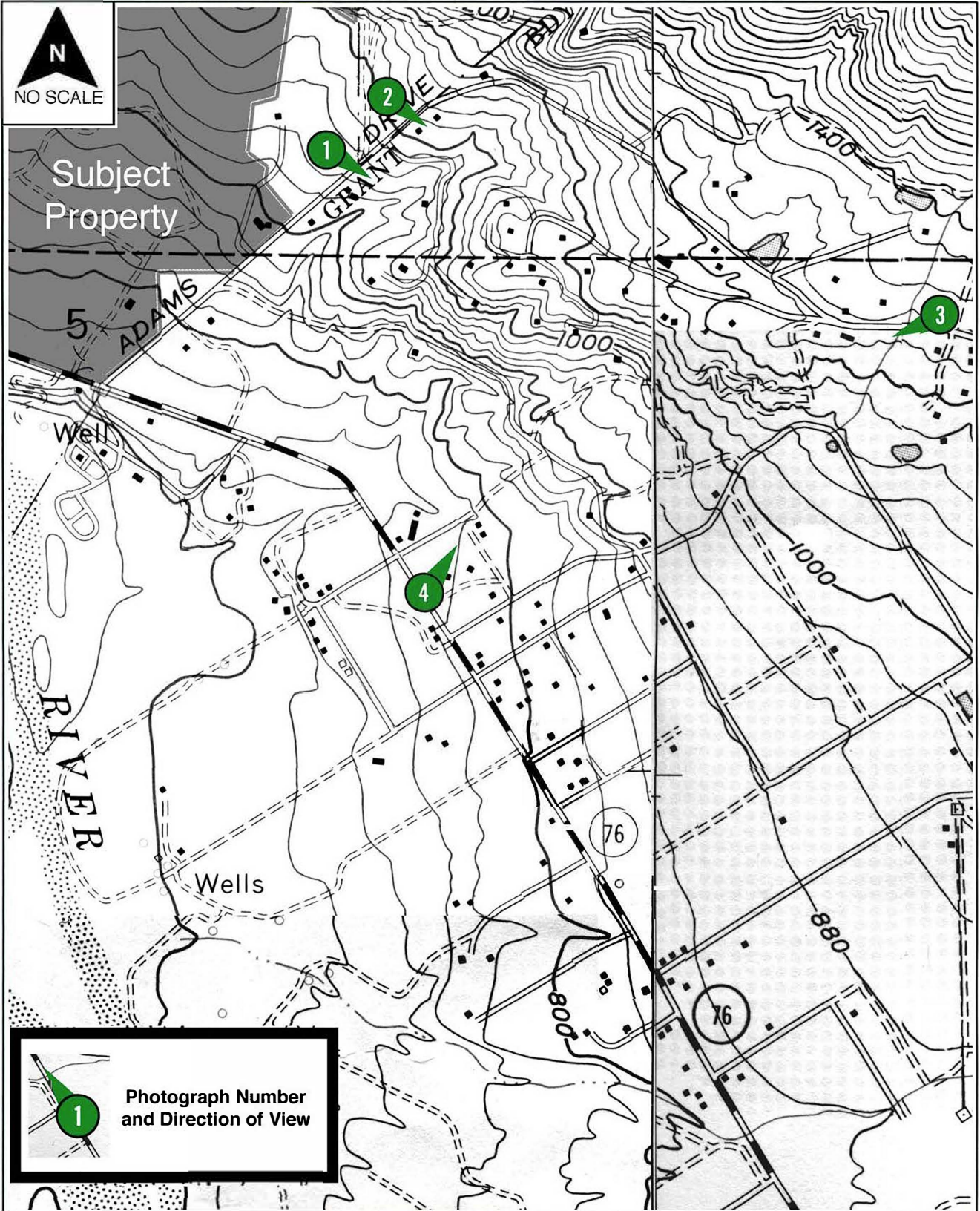
LAND WHICH DOES NOT MEET THE CRITERIA OF ANY OTHER CATEGORY. COMMON EXAMPLES INCLUDE LOW-DENSITY RURAL DEVELOPMENTS, WETLANDS, DENSE BRUSH AND TIMBERLANDS, GRAVEL PITS, AND SMALL WATER BODIES.



WATER

PERENNIAL WATER BODIES WITH AN EXTENT OF AT LEAST 40 ACRES.







Vicinity Photograph 1: Typical Accessory use on Adams Drive



Vicinity Photograph 2: Typical Residence on Adams Drive



Figure
3-1-5

Vicinity Photograph 3
Looking South from Adams Drive



Figure
3-1-6

Vicinity Photograph 4
Looking North from SR76 at Existing Homesites along Ridge



Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
2017	0.00	575.56	575.56	0.17	0.00	579.15
2018	0.00	196.05	196.05	0.04	0.00	196.99
Total						776.14
Yearly Average Construction Emissions (Metric Tons/year over 20 years)						38.81
Expected Construction emissions are based upon CalEEMod modeling assumptions for equipment and durations listed in the technical report (Appendix N).						

CO ₂ e Generator (Unmitigated)	Total Project CO ₂ e Emissions
	(Metric Tons)
Area (Project)	67.04
Energy (Electricity)	94.76
Energy (Natural Gas)	61.97
Mobile (Emissions including LCFS as reported from CalEEMod)	736.34
Waste	23.50
Water	22.38
Construction (Amortized over 20 years)	38.81
Total	1,044.80
CO ₂ e Design Features and Reductions Methodology	CO ₂ e Reduction (Metric Tons)
Area – Design Feature - wood burning hearths shall not be used. The project will be conditioned to only include natural gas burning hearth options – (Design Feature calculated within CalEEMod)	-35.12
Energy - Electricity – Renewable Portfolio will reduce emissions by 13%	-0.71
Energy - Electricity – Install 440 – 285 Watt Photovoltaic Panels	-89.31
Mobile - Pavley II Plus Tire Pressure Regulations – 2.47% combined reduction	-18.19
Waste – Project would install recycling bins to and would increase recycling to 75% diversion. – Reduction factor of 25% applied – (Design Feature calculated within CalEEMod)	-5.88
Water – Project would install low flow water fixtures which would produce a 20% reduction for interior use (Design Feature calculated within CalEEMod)	-3.16
Water – Renewable Portfolio will reduce energy usage for water supply, treatment and distribution by 13%	-2.91
Design Feature and Reductions Total	-155.28
Total Unmitigated GHG Emission	1,044.80
Combined Total with Design Features and Reductions	889.52