V. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The following impact analysis was developed based on the information provided in Sections I, Introduction, through IV, Environmental Setting. All impacts in the EIR have been classified according to the following criteria:

- **Class I – Significant, unavoidable, adverse impacts:** Significant impacts that cannot be effectively mitigated. No measures could be taken to avoid or reduce these adverse effects to insignificant or negligible levels.

- **Class II – Significant, but mitigable impacts:** These impacts are potentially similar in significance to those of Class I, but can be reduced to a level of insignificance or avoided by the implementation of mitigation measures.

- **Class III – Less than significant impacts:** Mitigation measures may still be required for these impacts as long as there is rough proportionality between the environmental impacts caused by the project and the mitigation measures imposed on the project.

- **Class IV – Beneficial impacts:** Effects that are beneficial to the environment.

The term "significance" is used throughout the EIR to characterize the magnitude of the projected impact. For the purpose of this EIR, a significant impact is a substantial or potentially substantial change to resources in the local proposed project area or the area adjacent to the proposed project. In the discussions of each issue area, thresholds are identified that are used to distinguish between significant and insignificant impacts. To the extent feasible, distinctions are also made between local and regional significance and short- versus long-term duration.

Where applicable, mitigation measures have been identified to reduce project impacts to less than significant levels. CEQA requires that public agencies should not approve projects as proposed if there are feasible mitigation measures available which would substantially lessen the environmental effects of such projects (CEQA Statute §21002). Included with each mitigation measure are the plan requirements needed to ensure that the mitigation is included in the plans and construction of the project and the required timing of the action (e.g., prior to recordation of final map, prior to occupancy clearance, prior to issuance of building permits).

The impact analysis sections within this chapter of the EIR are structured based on the type of resource affected relative to the physical changes resulting from the project. Impacts that would occur over a project-wide basis are discussed as such. Impacts specific to phases (i.e., Phase One, Phase Two, Phase Three, and Future Development), and elements within each phase (i.e., residential development, ranch headquarters, wastewater treatment facility, and dude ranch) are assessed in sub-headings following the project-wide impact discussion, as applicable.

The following two sections, Water Resources and Biological Resources, retain their section heading letters and page numbers from the 2008 Draft EIR for ease of comparison (i.e., between the 2008 Draft EIR and 2011 Recirculated Draft EIR). The page numbers will be updated when the Recirculated Draft EIR is integrated into the Final EIR.

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B. WATER RESOURCES

This section provides general background information on the state of existing project site water supply information, current water usage estimates, water demand estimates, and water-related impacts due to the on-site wastewater treatment facility, surface water quality, and identification of potential impacts as a result of the proposed project. Following public circulation of the Draft EIR (2008), public comments were received identifying potential inadequacies in the technical reports that supported the EIR analysis and determination of effect. Upon review of these comments, the County determined that further analysis of water resources was necessary to adequately assess the baseline conditions and environmental effects of the project, including sustainable yield. An independent peer review of technical reports provided by the applicant and the Draft EIR analysis was conducted in April 2009. As a result of the independent peer review, cyclic well testing and monitoring was conducted from October 16, 2009, through December 31, 2010, including sustainable yield testing between September and December 2010. A third-party, independent analysis of the well and sustainable yield testing was conducted, and a sustainable yield assessment was provided to supplement the analysis presented in this Recirculated Draft EIR section.

In addition, the Draft EIR (2008) included the proposed use of Wells 10, 11, 12, and 13 for domestic water supply. As noted in the Draft EIR (2008), use of Wells 12 and 13 would affect stream flow within Los Berros Creek. In response to the Draft EIR (2008), the applicant proposed to use Wells 10, 11, 14, and 15 for domestic water supply. Existing Wells 14 and 15 are located within the northeastern portion of the project site. An existing buried water line extends from these wells into the vineyards and is located within an agricultural road. This line would be replaced to serve the residential development.

This section references a number of recent groundwater studies and/or reports conducted for this project by the applicant's consultant, an independent consultant retained by the County, and a third-party consultant retained to provide peer review and documentation for the EIR; these studies are referenced where applicable. Information contained within each of the reports was used in assessing the potential impacts of the proposed project. These reports, which are appended to this document where indicated, and are on-file with the County Environmental Resources and Management Division, are listed below.

Documents included in the Draft EIR (2008):

- *Water Resources of the Arroyo Grande – Nipomo Mesa Area in 2002:* California Department of Water Resources (DWR), October 25, 2002 (hereinafter referred to as the 2002 DWR report)

- *Hydrology & Hydraulic Report,* RRM Design Group, January 5, 2004. The RRM hydrology report includes an analysis of existing and future storm water runoff

- *Water Supply Assessment for Laetitia Vineyard and Winery,* Cleath and Associates, Arroyo Grande, California, January 27, 2004

- *Revised Water Demand and Source Capacity for Laetitia Agricultural Cluster,* Cleath and Associates, San Luis Obispo County, October 6, 2005

- *Additional Water Resources Development, Laetitia Vineyard and Winery,* Cleath and Associates, Arroyo Grande, San Luis Obispo County, October 6, 2005

- *Response to County Comments on Water Resources, Laetitia Agricultural Cluster EIR,* Cleath and Associates, Arroyo Grande, San Luis Obispo County, March 28, 2008

- *Mitigation of Stream Flow Impacts, Laetitia Agricultural Cluster,* Cleath and Associates, Arroyo Grande, San Luis Obispo County, November 4, 2008

Documents prepared for and/or incorporated into the Recirculated EIR (2012):

- *Hydrogeologic Review Water Resources Section of the Draft Environmental Impact Report Laetitia Agricultural Cluster Subdivision, Tentative Tract Map and Conditional Use Permit, SCH No. 2005041094,* Fugro, April 23, 2009

- *Response to Hydrogeological Peer Review of Water Resources Section, Laetitia Agricultural Cluster Draft Environmental Impact Report,* Cleath and Associates, June 24, 2009

- *Supplemental Hydrogeologic Review Water Resources Section of the Draft Environmental Impact Report Laetitia Agricultural Cluster Subdivision, Tentative Tract Map and Conditional Use Permit, SCH No. 2005041094,* Fugro, June 9, 2009

- *Response to Supplemental Hydrogeological Peer Review of Water Resources Section, Laetitia Agricultural Cluster Draft Environmental Impact Report,* Cleath and Associates, July 2, 2009

- *Laetitia Well Testing and Sustainable Yield Assessment,* Cleath-Harris Geologists, July 2010

- *Laetitia Well Testing and Sustainable Yield Assessment Addendum,* Cleath-Harris Geologists, March 2011

Documents provided in Appendix B:

- *Review of Well Testing and Sustainable Yield Assessment Proposed Laetitia Agricultural Cluster Subdivision,* Geosyntec Consultants, September 2011

- *Baseline Water Demand,* Geosyntec Consultants, April 2012

1. Existing Conditions

a. Hydrogeology and Water Supply

The project site is located within the Oceano Hydrologic Sub-area (HSA), which has a watershed area of 97,830 acres, and is outside of the Santa Maria Groundwater Basin, as defined by the Santa Clara Superior Court (Case CV 770214). The Tri-Cities Mesa Arroyo Grande Plain and Nipomo Mesa HSA are located to the west and southwest of the project site (refer to Figure V.B.-1). All existing and future water demands at the project site are served or would be served by on-site groundwater resources, including wells in the upper Los Berros Canyon. Existing vineyard/winery/ranch facilities would maintain the existing use of wells.

1) Rainfall

Mean annual rainfall within the Arroyo Grande-Nipomo area ranges from 12 to 35 inches, with 75 percent occurring between December and March (DWR, 2002). Based on a contour map of equal mean precipitation for the period of record from 1870 to 1995, the expected mean annual rainfall for the project site is approximately 17 inches. Beginning in January 2010, rainfall was recorded at three rain gauges installed at the project site. Based on correlation of the on-site data with a private gauge in east Arroyo Grande Valley, the rainfall record was extended back to July 2009. Based on a comparison of current and historic data, the total rainfall in the project area between July 2009 and March 2011 was 138 percent of average.

2) Surface Water Flow

The project site is within the upper portion of the Los Berros Canyon Watershed (refer to Figure V.B-2). Los Berros Creek borders the southeast margin of the site and is a tributary of Arroyo Grande Creek, which flows into the Pacific Ocean near the community of Oceano. Flow in Los Berros Creek is intermittent and influenced by the distribution and depth of alluvial deposits along the creek (Cleath and Associates, 2004; Cleath-Harris Geologists, 2010).

The headwaters of Los Berros Creek are located northeast of Temettate Ridge and south of Newsom Ridge. The Los Berros Creek Watershed is 28 square miles in area and has a length of approximately 14 miles. Runoff from Temettate Creek and numerous other small tributaries accumulates prior to emptying into Los Berros Creek. DWR reported annual runoff between 800 and 1,100 acre feet for the entire Los Berros Creek watershed for the base period (1984 to 1995) used for a study of Water Resources of the Arroyo Grande-Nipomo Mesa Area (DWR, 2002). A gauge established on Los Berros Creek in August 1968 by L. Lopp in cooperation with San Luis Obispo County Flood Control monitors runoff from the upper 54 percent of the Los Berros watershed. The United States Geological Survey (USGS) maintained a continuous daily record of streamflow at the gauging station from 1968 to 1978. In October 1979, the County Department of Engineering (Public Works) assumed control of the gauge. The gauging station is northeast of U.S. Highway 101 at the mouth of the upper canyon near the middle of the southeast margin of the project site, 0.8 miles downstream from Adobe Creek and 3.7 miles north of Nipomo on the upstream side of the bridge where Los Berros Road crosses the creek (refer to Figure V.B.-2). The road crossing is a box culvert with a 15-foot concrete lip that has become a grade control structure. The channel downstream has been down-cut significantly; consequently, the culvert can be a barrier to fish passage (Central Coast Salmon Enhancement, 2005). Downstream of the gauge most of the surface flow in Los Berros Creek seeps into the alluvial

deposits of the lower valley. For this period of the USGS records (1968 to 1978), the mean flow rate of Los Berros Creek was in the range of one and eight cubic feet per second (cfs) during the months of January to May, and 0.16 to 0.68 cfs during the months of June to December. Based on the minimum flow in the USGS record, the resolution of low flow at the Los Berros gauging station was 0.01 cfs, or 4.5 gallons per minute (gpm). The only days with zero flow were during a continuous period without any flow from early October to late December in 1977.

The County Department of Public Works provided available daily flow data for the Los Berros Creek gauging station for the period from 1978 to March 2011. However, no gauging data for Los Berros Creek are available for the period from 2002 to 2005. Some field records with the County indicate that the creek was dry during that period but no data logs have been found to confirm the creek stage or flow during this period. The Bartleson Development Plan (Morro Group, 1996) indicated that discharge of groundwater maintained base flow in Los Berros Creek during the dry season prior to approximately 1981 when groundwater pumping was increased from the fractured tuff aquifers of the Obispo Formation. The stream gauging data also show zero flow prior to 1981 in the creek during the dry season in 1977, 1979, and 1980. Refer to Appendix B, Figure 5, which shows the estimated mean monthly flow rate in Los Berros Creek both for the entire period of record 1968 to 2001 and for the period from 1981 to 2001.

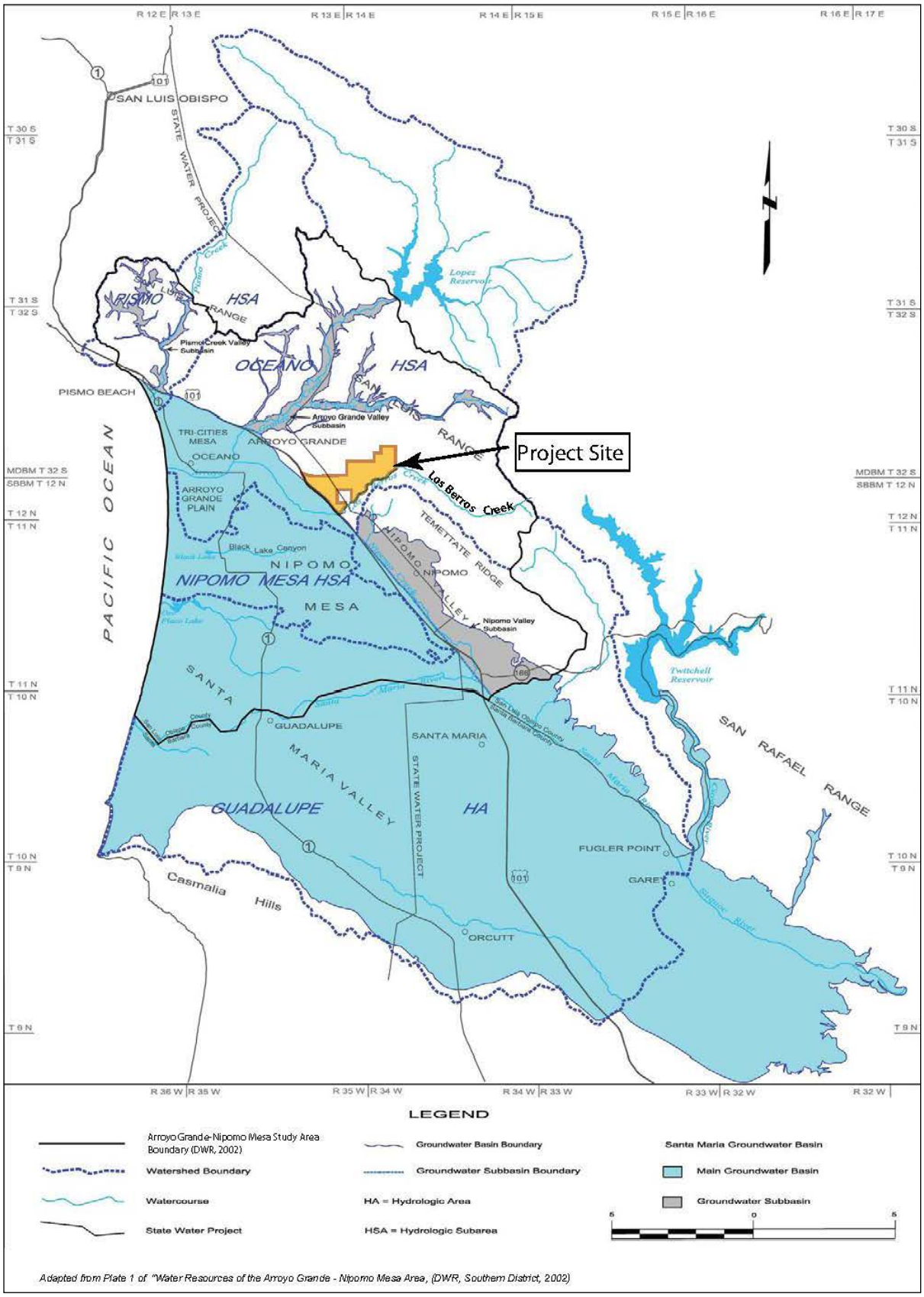
1) Hydrogeology

The project site is underlain by Early Miocene age rocks of the Obispo and Monterey Formations, Pliocene-Pleistocene age rocks of the Paso Robles Formation, and localized shallow unconsolidated alluvial deposits along Los Berros Creek, Adobe Creek, and other drainages. The location of onsite wells and underlying geology is shown in Figures V.B.-3 and V.B.-4. The majority of wells in the vicinity of the project site are completed within fractured bedrock aquifers in the Obispo and Monterey Formations.

The 2002 DWR report stated that the Early Miocene Obispo Formation and the Miocene Monterey Formation are both important sources of water supply in the vicinity. The Obispo Formation consists of resistant mineralized tuff and fine- to coarse-grained crystalline tuff, interbedded with lava flows and fine-grained calcareous sediments. Locally, the tuffs are intruded by dikes and sills. Portions of the lava flows, dikes, sills, and the majority of the ashy matrix of the coarse-grained tuff are commonly altered to clay. Groundwater within the Obispo Formation occurs primarily within fractures in the relatively unaltered resistant mineralized tuff.

The Monterey Formation consists of a range of sedimentary rock types including silicified siltstone, claystone, sandstone, well-bedded claystone, cherty or porcelaneous shale, and dolomitic shale. Much of the Monterey Formation is fractured and sheared. Groundwater within the Monterey Formation occurs mainly within fractures and parting parallel to bedding.

The Pliocene-Pleistocene Paso Robles Formation is present in the western portion of the project area and includes unconsolidated to poorly consolidated gravel and clay, sand and clay, silty clay, conglomerate with clasts of Monterey Formation, and some lenses of gravel and sand. Localized unconsolidated Holocene alluvial sedimentary deposits are present along the lower portion of Los Berros Creek and other drainages in the area. Some shallow wells are completed in the alluvial deposits along creeks.



Source: Geosyntec Consultants, 2011

Site Location and Hydrologic Setting
FIGURE V.B.-1

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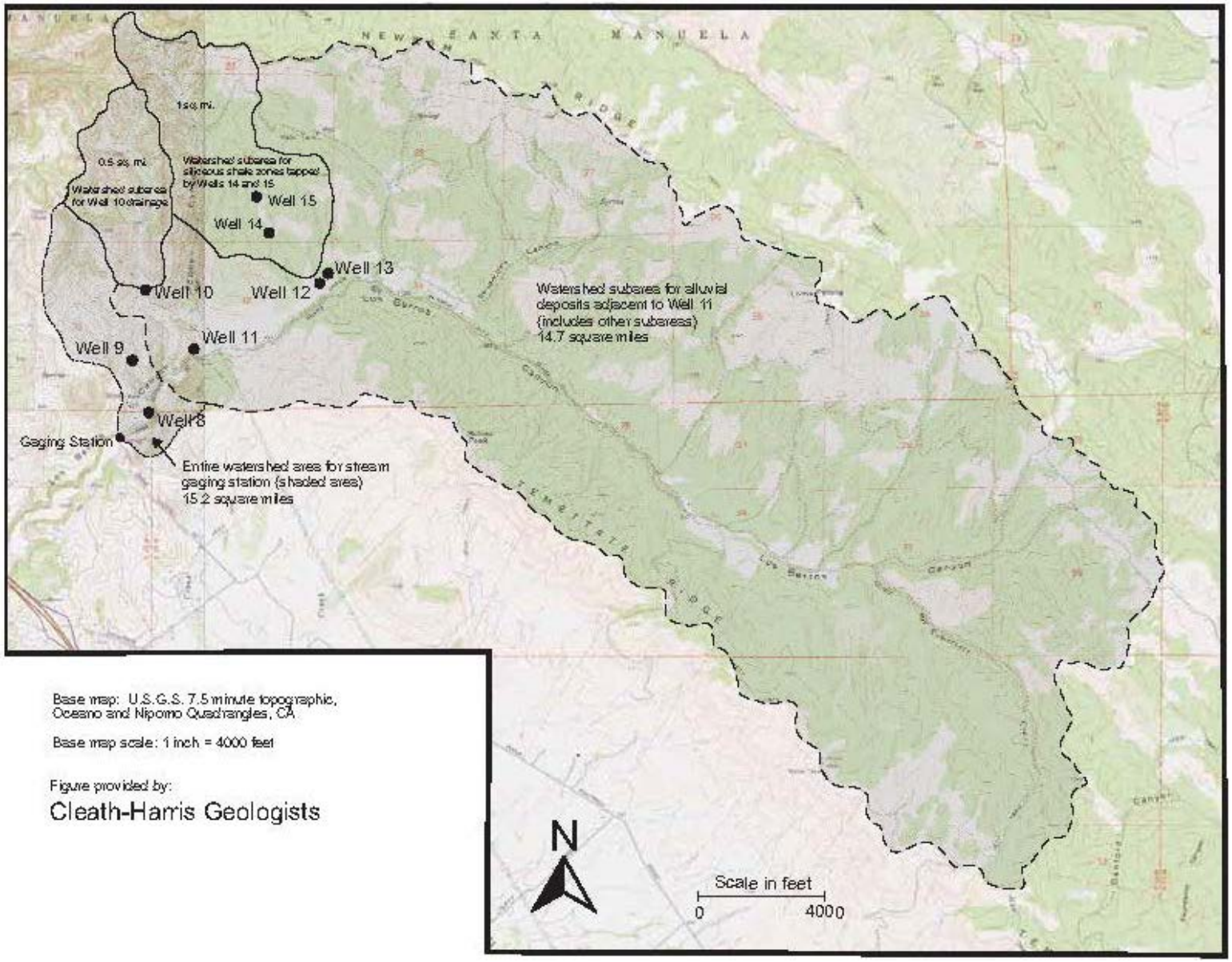

Source: Geosyntec Consultants, 2011

Los Berros Canyon Watershed
FIGURE V.B.-2

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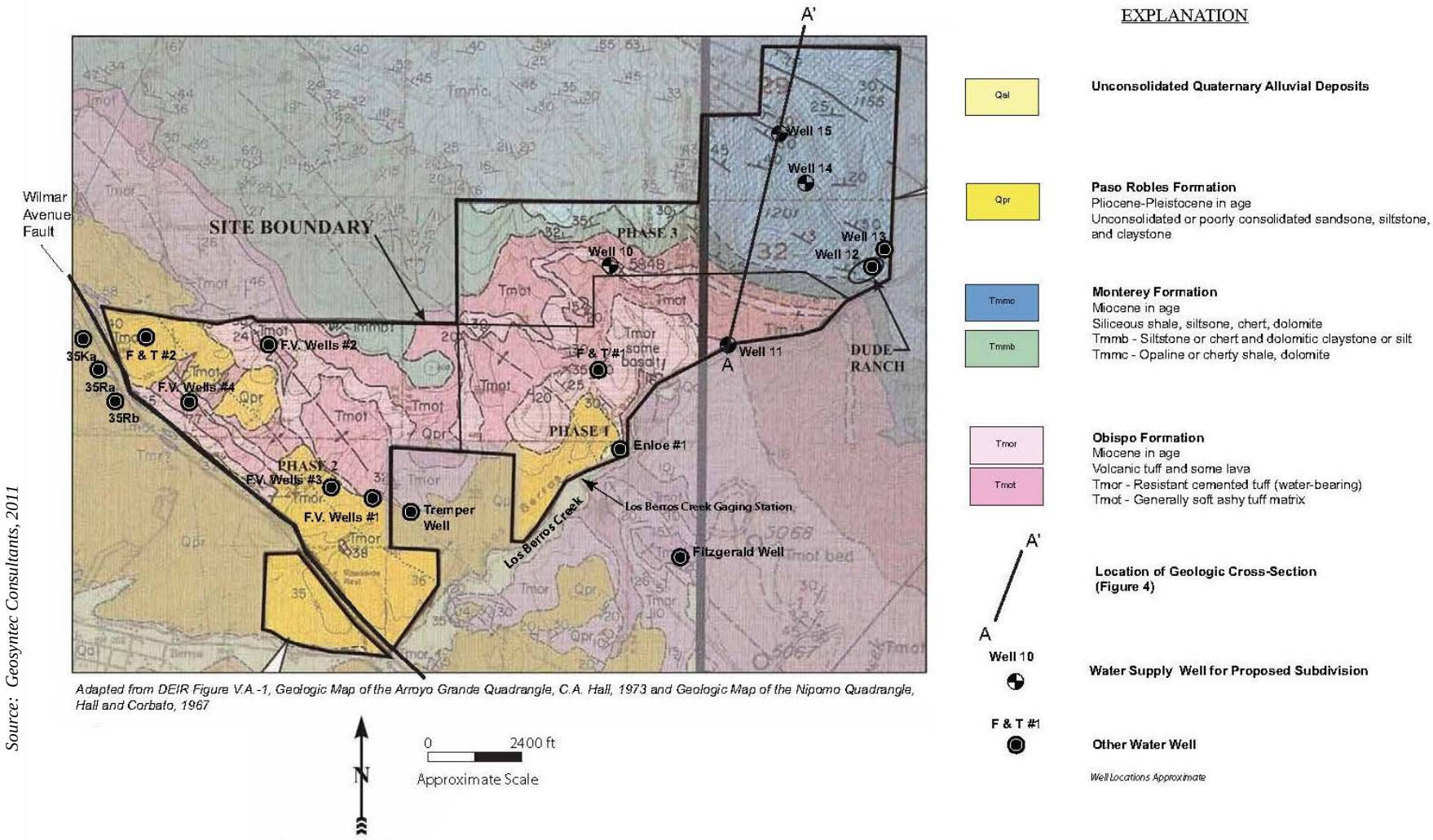

Adapted from DEIR Figure V.A.-1, Geologic Map of the Arroyo Grande Quadrangle, C.A. Hall, 1973 and Geologic Map of the Nipomo Quadrangle, Hall and Corbato, 1967

Source: Geosyntec Consultants, 2011

Local Geologic Map and Well Locations
FIGURE V.B.-3

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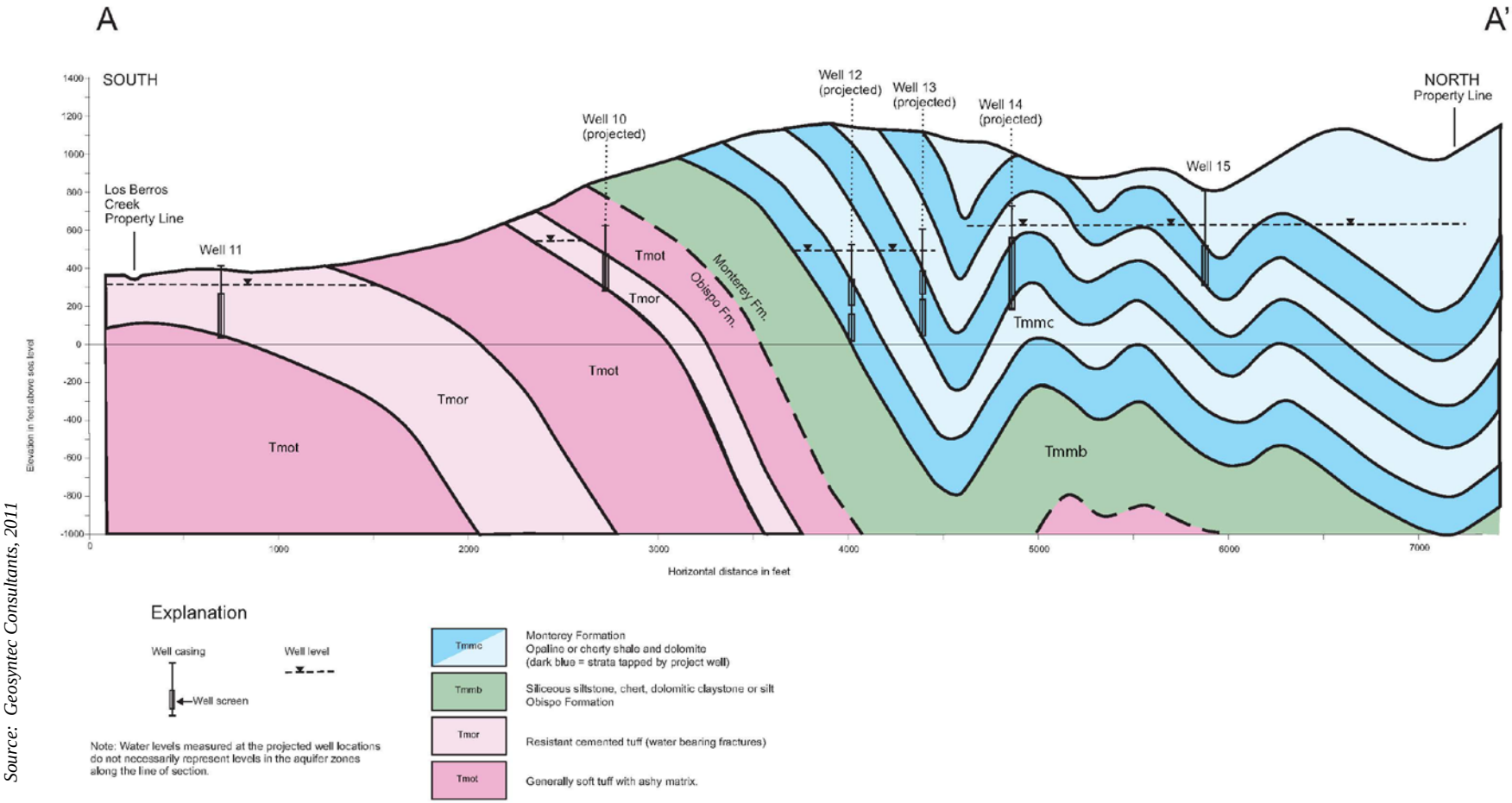

Source: Geosyntec Consultants, 2011

Geologic Cross Section A-A'
FIGURE V.B.-4

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2) Wells and Infrastructure

Seven wells were constructed at the project site between 1983 and 1999. Historically, onsite water supply included separate domestic and agricultural irrigation systems. The domestic supply included two wells (FV Wells 2 and 4) that provided water for the winery, shop, and two single-family residences. The agricultural irrigation system included four wells (FV Wells 1 and 3, F&T-1 and 2) and two reservoirs each with storage capacity of 25 acre-feet (af). Vineyard irrigation Wells F&T-1 and 2 were installed in 1998. The domestic well (FV Well 2) and the four irrigation wells are all completed in the fractured tuff of the Obispo Formation. Additional wells included a shallow well (Enloe-1) completed in alluvium adjacent to Los Berros Creek and an older windmill-powered well near the maintenance shop (refer to Figure V.B.-5 for well and reservoir locations).

Nearby offsite wells are also completed in the fractured tuff of the Obispo Formation and include the Tremper irrigation well, which is approximately 800 feet southeast of FV Well 1, and three irrigation wells (Bartleson 35Ka, 35Ra, and 35 Rb), which are southwest of the project site along U.S. Highway 101. Springs occur in some places where the fractured rock aquifers are exposed along slopes. Water from a spring northwest of Well F&T-1, with a reported flow rate of two to five gallons per minute (gpm), was piped to a storage tank that supplied water to the ranch headquarters. Average annual production from the onsite irrigation wells was 161 afy between 1999 and 2003. The domestic wells are not metered. In 2003, Cleath and Associates estimated the total water production from the two domestic wells was 6.72 afy.

In addition, a shallow (six feet deep) well in the Los Berros Creek channel reportedly provides water to a residence near the southeast corner of the project site (dude ranch parcel). Six new wells that range in total depth from 305 feet to 560 feet were drilled in the northeastern portion of the project site between 2003 and 2006 (refer to Figure V.B.-5). Groundwater pumped from four of the new wells completed in fractured bedrock (Wells 10, 11, 14, and 15) is proposed as the domestic water supply for the proposed project. Wells 10 and 11 are screened in the fractured resistant volcanic tuff of the Obispo Formation and Wells 14 and 15 are screened in the siliceous shale of the Monterey Formation.

The applicant proposes a looped water-main distribution system for all new facilities served by the four domestic wells. All water system facilities would be designed and installed in accordance with the County's Standards for Water Systems. In addition, the applicant intends to develop a mutual water company as approved by the County Environmental Health Services. Operation of the water system will be monitored in accordance with all applicable standards and regulations using a certified operator to oversee well pumping, storage, distribution, maintenance of the system, and overall water quality in accordance with all State and County requirements. A 268,500-gallon water storage tank is proposed to provide fire suppression requirements and peak daily water demand usage requirements.

3) Existing Water Use

Information contained in this section is based on the resource capacity studies prepared by Cleath and Associates (2005) for the proposed project, information provided by the applicant regarding irrigation rates and agricultural water usage (Cleath-Harris, 2012), and *Baseline Water Demand* letter report (Geosyntec, 2012). The existing vineyard, winery, and ranch facilities will continue

the historic use of groundwater resources on the west side of the property. Existing water use of these facilities is approximately 168 acre-feet per year (afy), of which 161 afy is used for 620 acres of vineyard and 4.9 acres of orchard irrigation, and approximately 6.71 afy is used by the winery and existing residential uses (based on available records for 1994 and 2003). The vineyards and orchards were irrigated by water from Wells 1, 3, 4, 5, and 9 and the winery and residence use water from Wells 2 and 7.

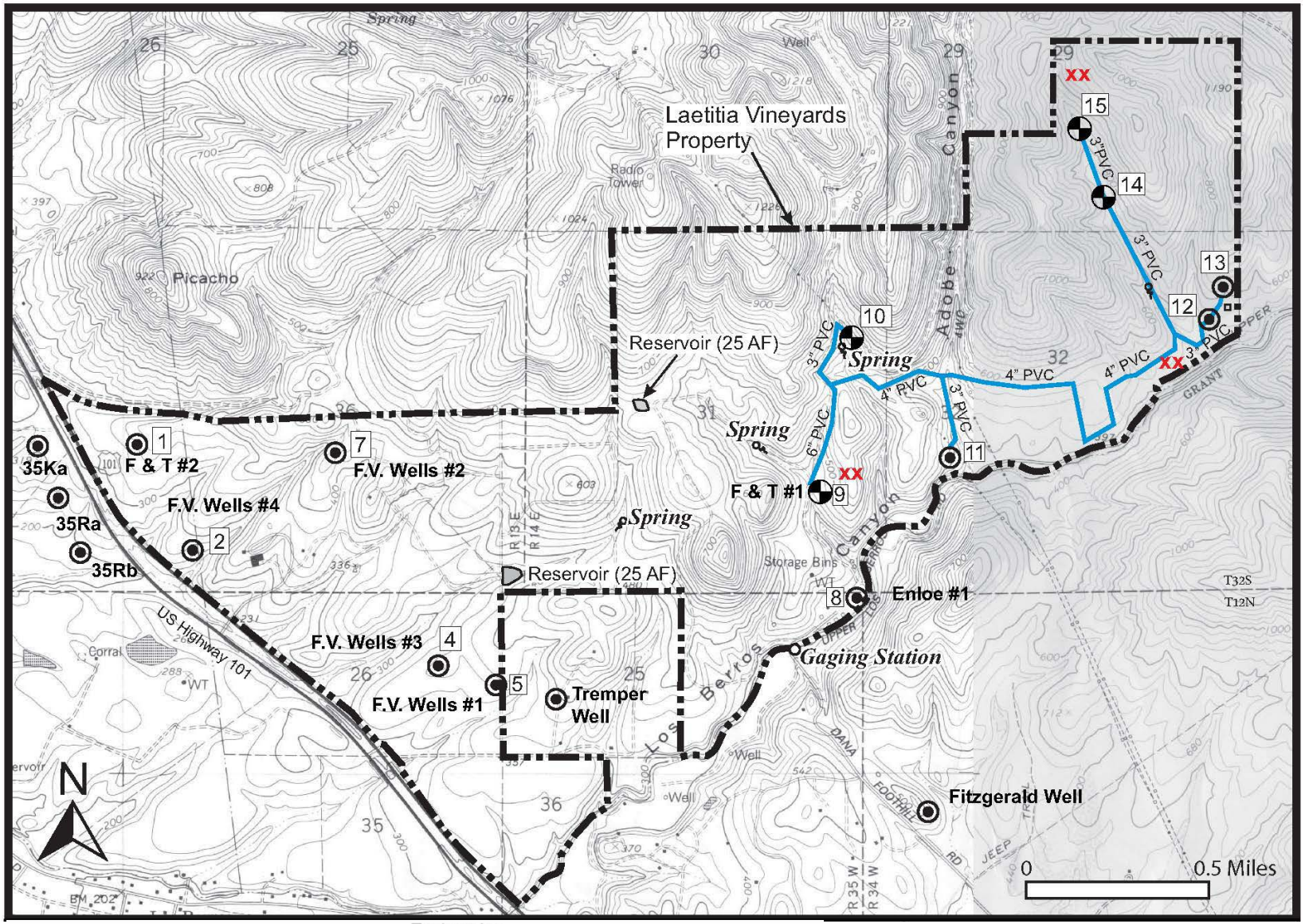
In 2011, 208 af of water was pumped from Wells 1, 4, and 9 for agricultural irrigation, indicating a water demand rate of 0.34 af/acre. This rate is lower than typical water demand rates for vineyards; however, the vineyard uses a drip irrigation system and there has not been a need for frost protection (i.e., use of water to prevent frost) at the site (Cleath and Associates, 2004; Geosyntec, 2012). Conservative estimates of typical agricultural irrigation rates are provide in the *Baseline Water Demand* report (Geosyntec, 2012), available in Appendix B. This rate is more typical of vineyard irrigation in coastal areas of the county, if water is not used for frost protection. Table V.B.1 presents the estimated amount of annual water demand for existing and proposed agricultural uses on the project site, based on 2011 water usage.

TABLE V.B.-1
Existing Water Demands

Land Use	Units / Description	Rate (afy/acre)	Water Demand (afy)
Domestic	One residence, one caretakers unit, offices, tasting room, landscaping, shop	---	8.95
Winery, production	One winery	---	5.3
Vineyards and orchards	620 acres (vineyard) 4.9 acres (orchard)	0.34	208
Total, existing			222.3
Planned Vineyards	27 acres	0.34	9.2
Total (existing and planned agricultural demand)			231.5

Source: Cleath-Harris, 2012; Geosyntec, 2012

Existing water demands are approximately 222 afy, and an additional 27 acres of planned vineyards would add approximately 9 afy of demand to this figure for a total of 231 afy. Approximately 93.5 percent (208 afy) of the existing water demand is for vineyard and orchard irrigation. Approximately 2.5 percent (5 afy) is used for wine production, and the remaining 4 percent (9 afy) is used for other purposes, including residential uses, offices, tasting room, shop, and ornamental landscaping. The addition of 27 acres of vineyards would increase the demand ratio for agricultural irrigation by approximately 0.5 percent. Approximately 32 percent of agricultural water use results in groundwater recharge. Consumptive water use refers to the amount of groundwater that does not result in groundwater recharge, and is permanently removed from the local aquifer system. Since approximately 208 afy is currently used for agricultural irrigation, approximately 66 afy would return to the aquifer as groundwater recharge. Therefore, the net consumptive use for existing agricultural irrigation is approximately 142 afy.



Source: Geosyntec Consultants, 2011

Base map: U.S.G.S. 7.5 minute topographic, Oceano and Nipomo Quadrangles, CA
Base map scale: 1 inch = 2000 feet
Well locations approximate
Adapted from CHG memo, 4 Jan 2011

Explanation

15 Well Location and number

Well discharge piping

XX Weather recording station

Water Supply Well for Proposed Subdivision

Topographic Map
FIGURE V.B.-5

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4) Groundwater Rights

The amount of groundwater that can be used by an overlying groundwater rights holder is not defined by law. An overlying property owner is entitled to all of the water the owner can pump and beneficially use on his property until it adversely affects another neighboring property owner's ability to adequately produce water for use on their property. Groundwater can be produced by the project applicant for use on their properties on the basis of this right (Summit Station Final EIR, 2004). This being the case, the proposed project can establish production wells and withdraw groundwater for domestic use so long as it does not have a significant effect on neighboring domestic wells of private property owners.

5) Project Water Supply and Quality

(a) Background

Initial water studies were prepared by Cleath and Associates (2005), including an evaluation of pump testing, site geology, water level data, groundwater storage and aquifer recharge, and determination of sustainable yield. The results of these studies are summarized in the Draft EIR (2008), and the 2011 technical review report (Geosyntec, 2011) is appended to this Recirculated Draft EIR (refer to Appendix B). Following circulation of the Draft EIR (2008), the applicant proposed to replace use of Wells 12 (Well 2004-1) and 13 (Well 2004-2) with Wells 14 (Well 2006-1) and 15 (Well 2006-2) to avoid significant adverse impacts to Los Berros Creek.

In addition, based on receipt of substantial evidence following public review of the Draft EIR (2008), the County requested that a third party provide review of existing information, conduct independent testing, and evaluate if the existing wells can provide a sustainable water supply to meet the needs of the proposed development project. The California Water Code outlines two methods for evaluation of well capacity in fractured bedrock. Method 1 requires a report that includes well testing, evaluation of hydrogeology, historical use, and monitoring data from other local wells. Method 2 is either a 72-hour or 10-day test without the more comprehensive report.

Cleath-Harris Geologists initiated long-term testing of the wells in October 2009 and proposed a well testing program specifically designed for the project and setting, which would be consistent with Method 1 of the California Water Code Methods for Well Capacity Determination in fractured rocks. The *Laetitia Well Testing and Sustainable Yield Assessment Report* (Cleath-Harris Geologists, 2010) documents the first two phases of testing and presented an estimate of sustainable yield from the four project wells of 87 afy. Geosyntec conducted an independent peer review of the well testing data and *Laetitia Well Testing and Sustainable Yield Assessment Report*. Based on continuing decline of water levels exhibited in three of the four wells tested during the seven-month period, Geosyntec expressed concern that the average pumping rates from these three wells used during the testing is not sustainable. Accordingly, prior to further evaluation of the testing data and estimates of production capability, Geosyntec recommended additional testing during the dry season, and requested all available historical data and water level data in other wells in the vicinity to help assess seasonal variation (Geosyntec, 2010).

(b) Well Pumping Tests 2009 – 2010

The estimated total water demand of the project reported in the Draft EIR (2008) was 143 afy, which is equivalent to a production rate of 89 gpm (total capacity achieved by one or more wells). The applicant has eliminated the equestrian facility and incorporated water conservation measures into the project, which would reduce the estimated project water demand to 46.3 afy, which is equivalent to approximately 29 gpm (Cleath-Harris Geologists, 2010).

Three phases of cyclic pumping were conducted at the project site between October 2009 and December 2010. The third phase of pumping was conducted from late September 2010 through December 2010 at the estimated sustainable yield rate of 87 afy (54 gpm total for all four wells), which was based on the first two phases of testing (Cleath-Harris Geologists, 2010). During the three phases of pumping, the total volume of groundwater production from the four wells over the fifteen months was 93 af, equivalent to 74.4 afy, which is substantially more than the allocated project demand of 46.3 afy. Table V.B.-2 summarizes the three phases of pump testing, including total pumped af, calculated afy, and calculated gpm for Wells 10, 11, 14, and 15.

TABLE V.B.-2
Pump Testing Rates and Schedule

	Well 10	Well 11	Well 14	Well 15	Total	% of Project Demand
Phase 1 – October 12-December 16, 2009						
Operational Q gpm	50	45	50	35		174%
Total Pumped af	4	3.7	4.6	3.2	15.5	
Annualized afy	20.8	19.2	23.9	16.6	80.6	
Annualized gpm	12.9	11.9	14.8	10.3	50.0	
Phase 2 – January 16 to May 10-14, 2010						
Operational Q gpm	50	60	60	60		191%
Total Pumped af	11.7	16.1	12.9	13.1	53.8	
Annualized afy	35.1	48.3	38.7	39.3	161.4	
Annualized gpm	21.8	29.9	24.0	24.4	100.1	
Phase 3 – September 27-December 30, 2010						
Operational Q gpm	44	55	42	44		140%
Total Pumped af	2.8	1.03	5.2	5.5	23.8	
Annualized afy	10.2	38.3	19.4	20.4	88.3	
Annualized gpm	6.3	23.7	12.0	12.6	54.7	
Allocated Project Demand:					46.3 afy 28.7 gpm	

Abbreviations
gpm = gallons per minute
af = acre feet
afy = acre feet per year
Q = pumping rate

Source: Geosyntec Consultants, 2011

During the well pumping tests, full recovery of water levels occurred only at Well 11, which is within a few hundred feet of Los Berros Creek. The hydrograph for Well 11 shows strong correlation between rainfall and groundwater levels in the vicinity of Well 11, which indicates that groundwater levels in the vicinity of Well 11 are influenced by the base flow of Los Berros Creek (refer to Appendix B to review hydrographs and detailed data). Conversely, pumping from Well 11 likely influences base flow of Los Berros Creek. Wells 10, 14, and 15 are approximately 3,000, 2,700, and 4,000 feet from the creek, respectively, and compared to Well 11 are more isolated stratigraphically from the creek. Based on the fact that water levels in three of the four wells (Wells 10, 14, and 15) were still generally dropping during the Phase 3 pumping, and the groundwater in the aquifers near these wells did not reach equilibrium levels, continued pumping at the Phase 3 rates (54 gpm) will continue to deplete aquifer storage.

(c) Sustainable Yield

Sustainable yield does not have a "correct" value, but is a subjective concept, and its evaluation is an interdisciplinary issue. The concept of sustainable yield has been broadly defined as the amount of water that can be pumped indefinitely without unacceptable environmental, economic, or social consequences (e.g., Alley et al., 1999). According to the World Commission on Environment and Development (1987), sustainable development must meet the needs of the present without compromising the ability of future generations to also meet their needs. Typically, however, sustainable yield must also allow for sufficient natural discharge of groundwater to preserve streams, springs, wetlands, and riparian corridor ecosystems (e.g., Sophocleous, 1997, 2000).

As groundwater in storage is depleted and groundwater elevations continue to drop with ongoing pumping, the "cone of depression" associated with each pumping well (or group of wells) expands and groundwater within an increasing area flows toward the well. The extent of groundwater that ultimately flows to the pumping well is sometimes termed the extent of groundwater "capture" (e.g., Bredehoeft, 1997). The groundwater captured by pumping is derived from decreases in natural discharge and increases in recharge. Natural groundwater discharge commonly supports riparian and wetland ecosystems as well as the base flow of streams and rivers. The groundwater "captured" can also include increased recharge induced by pumping if the boundaries of the groundwater system include a surface water body or adjacent aquifer, but typically the majority of the capture associated with pumping consists of intercepted groundwater that would otherwise discharge or transpire elsewhere. Accordingly, the quantity of sustainable groundwater development usually depends on how much natural groundwater discharge can be captured (e.g., Bredehoeft, 1997, 2002; Ponce, 2007).

With continued pumping, the water level in an aquifer near a well can continue to drop ("drawdown") until it reaches the bottom of the well screen or pump intake, or the water levels may stabilize if capture expands to equal the pumping rate and a new equilibrium groundwater condition is attained. If a new equilibrium condition is attained the pumping rate theoretically may be sustainable with no further decline in water level (i.e., no additional depletion of groundwater in storage). However, the time to achieve equilibrium pumping conditions can take decades or centuries. And if the groundwater pumping exceeds the potential for capture, new equilibrium conditions are not possible (e.g., Bredehoeft and Durbin, 2009; Walton, 2011; Alley and Leake, 2004).

Based on the Phase 1 and 2 pumping and recovery data, the estimated long-term sustainable yield for each of the four wells totaled 87 afy with allowance for full recovery of water levels during average years to "operational static water levels established during Phase 1" pumping (Cleath-Harris Geologists, 2010). Table V.B.-2 on the following page lists the annualized average pumping rates for each of the four wells.

The Phase 3 testing established that water levels continued to drop at three of the four wells with pumping at the estimated sustainable yield rates; thus, equilibrium groundwater conditions were not attained with the Phase 3 production rates and depletion of groundwater storage continued. The "equilibrium discharge rate" approach used for the Phase 1 and 2 data was also used to calculate revised estimates of "equilibrium interval" sustainable pumping rates by accounting for the time for groundwater levels to recover to pre-Phase 3 "operational static" elevations and scaling the Phase 3 pumping rates accordingly. Scaling down the production rates to account for time for water levels to return to levels at the beginning of the Phase 3 testing (the approach used for the Phase 1 and 2 data) reduces the estimates of viable long-term production rates for Wells 10, 14, and 15 by 35, 52, and 45 percent, respectively. Scaling of the production rate was not applied to the Phase 3 testing data recorded at Well 11 because prominent recharge influence on water levels at this well occurred that was independent of pumping (Los Berros Creek).

Although the production capacity of Well 11 was substantially higher than the other wells, water level data in this well show rapid recharge likely due to good hydraulic connection between the aquifer and base flow in Los Berros Creek. Based on review of this data, Geosyntec recommends a modified production schedule, which includes curtailment of pumping from Well 11 from August through November each year to help preserve base flow in Los Berros Creek during the dry season, but a slight increase in Well 11 pumping from December through July.

Well 15 is the deepest of the four wells and has the largest available drawdown between the water level attained during Phase 3 pumping and the top of the well screen (approximately 80 feet). Consequently, a production rate from Well 15 that results in continuing gradual drawdown is more sustainable at Well 15 than at the other wells. Accordingly, the recommended long-term production rate for Well 15 includes a 25 percent increase to the revised calculated sustainable pumping rate that is based on the Phase 3 production and recovery data.

Table V.B.-3 lists the estimated sustainable pumping rates calculated by Cleath-Harris Geologists using the Phase 1 and 2 data, the actual Phase 3 pumping rates, and the revised estimates of viable long-term pumping rates based on the water levels recorded in the four wells during the Phase 3 pumping and subsequent recovery. The table includes Geosyntec's recommended adjustment of pumping schedule at Well 11 and increased production from Well 15 (relative to the revised rate scaled to the Phase 3 recovery). The resulting total production rate is approximately 62 afy or 39 gpm. This is a 28 percent decrease compared to the sustainable rate initially estimated to determine Phase 3 testing pumping rates, but 135 percent of the allocated project demand of 46.3 afy (29 gpm).

The resulting <u>revised</u> estimate of sustainable yield from the four wells is approximately 62.4 afy, which equates to an average pumping rate of 38.7 gpm (total production for all four wells).

TABLE V.B.-3
Estimates of Sustainable Yields for Wells 10, 11, 14, and 15

	Well 10	Well 11	Well 14	Well 15	Total	% of Project Demand
Estimated Sustainable Yield Based on Phase 1 & 2 Testing (Cleath-Harris Geologists, 2010)						
afy	10	38	19	20	87.0	188%
gpm	6.2	23.6	11.8	12.4	53.9	
Phase 3 Testing – Production Schedule Duration of 14 Weeks (Cleath-Harris Geologists, 2010)						
Operational Q gpm	44	55	42	44		191%
Total Pumped af	2.75	10.30	5.23	5.48	23.8	
Annualized afy	10.2	38.3	19.4	20.4	88.3	
Annualized gpm	6.3	23.7	12.0	12.6	54.7	
Calculated Yield Based on Phase 3 Testing						
Pumping Start-Recovery Dates	9/27/10-2/27/11	*	9/27/10-4/27/11	9/27/10-3/27/11		
Pumping Period (weeks)	14	14	14	14		
Recovery Period (weeks)	8	0	16	12		
Total Weeks	22	14	30	26		
Calculated Yield – afy	6.5	38.3	9.1	11.0	64.8	140%
Calculated Yield – gpm	4.0	23.7	5.6	6.8	40.2	
Adjustment to Protect Creek Baseflow**						
afy	6.5	28.1	9.1	15	58.6	127%
gpm	4.0	26.1***	5.6	9.3	36.3	
Optimized Estimated Sustainable Yield – Recommended Pumping****						
afy	6.5	28.1	9.1	18.8	62.4	135%
gpm	4.0	26.1***	5.6	11.6	38.7	
% of Phase 1 & 2 estimates	65%	74%	48%	94%	72%	
% decrease relative to Phase 1 & 2 estimates	35%	26%	52%	6%	28%	
Allocated Project Demand:					46.3 afy 28.7 gpm	

Notes
gpm = gallons per minute
af = acre feet
afy = acre feet per year
Q = pumping rate
* No adjustment for Well 11 recovery due to influence by creek.
** No Q from Well 11 August through November, but 10% increase December through June.
*** For version 4 and 5, operational Q for Well 11 is average rate for eight months, but Q for Wells 10, 14, and 15 is average rate for 12 months.
**** Well 11 as above and increased Q at Well 15 by 25%.

Source: Geosyntec Consultants, 2011

(d) Aquifer Properties

Portions of the water level data recorded at Wells 10, 11, 14, and 15 during the testing program were analyzed by Geosyntec to estimate the rate that groundwater flows horizontally through an aquifer (transmissivity). Aquifer type-curves used for analyses included the Theis confined solution, Copper-Jacob approximation of the Theis solution, and the Hantush-Jacob Leaky Aquifer solution (e.g., Kruseman and de Ridder, 1992). Four general methods were used to estimate transmissivity; the aquifer testing analyses are provided in Appendix B.

The methods used for estimating transmissivity and hydraulic conductivity of the aquifers tapped by the wells at the project site are based on the assumption that the aquifers are uniform throughout and in all directions. Generally, fractured bedrock is not uniform and isotropic; however, at a large scale, fractured bedrock aquifers can be reasonably represented by an equivalent homogenous porous media, although a directional bias of hydraulic conductivity is common.

Initial yield from wells in fractured bedrock aquifers is often not representative of longer-term yields, which are typically lower. As groundwater is released from storage in fractures, the hydraulic gradient toward the well becomes progressively lower, which causes the well yield to decline. A relatively lower hydraulic gradient at the end of the pumping period limits the rate of groundwater flow back into the area of drawdown, so recovery is often substantially slower than drawdown (e.g., Robinson, Noble & Saltbush, 2004; Morrison-Maierle, 2002).

Although the standard analytical techniques for groundwater flow assume uniform radial flow of groundwater toward a pumping well, flow within fracture systems commonly have more linear geometry (e.g., Morrison-Maierle, 2002). For radial flow systems, the rate of drawdown gradually decreases with pumping duration because the volume of aquifer influenced by pumping increases by the distance squared. For a system of linear fractures tapped by a well in bedrock, the volume of aquifer influence by pumping can increase linearly with distance, so the rate of drawdown with pumping will be faster than for radial systems.

(e) Groundwater Quality

Analytical water quality tests were performed to determine suitability for domestic uses. Water quality in each of the four new wells was determined suitable for domestic uses (refer to Table V.B.-4). There were no concentrations of analytes exceeding the maximum contaminant level (MCL) for either the primary drinking water standards or the upper limit MCLs for secondary drinking water standards established by the California Department of Health Services (DHS).

TABLE V.B.-4
Project Well Water Quality

	Well Number			
	10 (2004-3)	11 (2005-1)	14 (2006-1)	15 (2006-2)
Flow Rate (gpm)	200	130	230	150
Casing	10-inch PVC	8-inch PVC	8-inch PVC	8-inch PVC
Ground Elevation	620	410	710	830
Sanitary Seal Depth	100	50	n/a	n/a
Total Depth	330	305	530	520
TDS (MCL=1000)	860	650	590	540
Hardness	340	470	520	470
Iron (MCL=0.3)	0.2	0.1	0.2	0.2
Manganese (MCL=0.05)	<0.02	<0.02	0.04	0.03
Sulfate (MCL=500)	350	140	78	46
Sulfide	<0.1	<0.1	n/a	0.1
Chloride (MCL=500)	52	53	34	27

Water quality results in milligrams per liter
MCL= Maximum Contaminant Level
gpm = gallons per minute
afy = acre-feet per year
depths in feet

b. Drainage and Surface Water Quality

The issue of surface water quality is important because of the habitat value of Los Berros Creek and its tributaries, including habitat for several endangered or threatened plant and animal species. Surface water entering water courses from undeveloped areas usually travels over vegetative cover and there is little erosion or production of sediment. Developed areas typically contain pollutants on the ground surface that are harmful to water quality. These include heavy metals, hydrocarbons, detergents, fertilizers, and pesticides that originate from vehicles, agricultural equipment, and commercial and residential land use activities. For the most part, these pollutants are associated with sediments that collect on roadways and are flushed into the creek system either in dry weather flows during construction wash-down or by rainfall runoff. Construction activities also create erosion and cause sediment to be transported off-site by surface water runoff. Therefore, water quality depends mainly on the hydrologic characteristics of the drainage basin, the makeup of the soils in the watershed, and sources of pollution in the watershed.

The project site consists of 19 sub-watersheds that drain into Los Berros Creek and its tributaries. Soil conditions and topography vary throughout the project site and several undeveloped and developed areas contain steep slopes or soils subject to erosion where containment of sediment on-site would require special construction and design considerations. Generally, due to their

clayey nature, the onsite surface materials in their natural state are considered to have a low erosion potential. The potential for erosion would be significant, however, if site development activities result in concentration of drainage, or uncontrolled surface drainage, or if soils that are more prone to erosion are imported to the site during grading. Permeability is generally slow, and the rate of surface water runoff ranges from medium to rapid, primarily depending on slope.

2. Regulatory Setting

a. Federal Policies and Regulations

1) Safe Drinking Water Act of 1974

The Safe Drinking Water Act implemented by the Environmental Protection Agency (EPA) is the primary federal regulation controlling drinking water quality. The Safe Drinking Water Act grants the EPA the authority to establish and enforce guidelines for the achievement of minimum national water quality standards for every public water supply system serving 25 people or more.

This act was originally implemented in 1974 with significant revisions in 1986. The Safe Drinking Water Act originally set standards for 83 individual constituents, including pesticides, trihalomethanes, arsenic, selenium, radionuclides, nitrates, toxic metals, bacteria, viruses, and pathogens. The 1996 amendment to the Safe Drinking Water Act made some significant changes, most of which resulted in more stringent application of control technology. The amended Safe Drinking Water Act also adopted a more rigorous schedule for amending the Disinfectants/Disinfection By-Products Rule and the Enhanced Surface Water Treatment Rule, both of which took effect in 1998.

2) The Clean Water Act

The Clean Water Act (CWA) controls the discharge of toxic material into surface water bodies. Under this act, states are required to identify water segments impaired by pollutants and develop control strategy/management plans to reduce pollution and meet certain water quality standards.

3) Waters of the U.S: Sections 404 and 401 of the Clean Water Act of 1977

Since it has been identified that construction of the proposed wastewater collection system would require crossing several tributaries to Los Berros Creek, federal regulations regarding impacts to "Waters of the U.S." would be addressed.

Regulatory protection for water resources throughout the United States is under the jurisdiction of the ACOE. Section 404 of the CWA prohibits the discharge of dredged or fill material into waters of the United States without formal consent from the ACOE. Waters of the U.S. include marine waters, tidal areas, stream channels, and associated wetlands. Wetlands include freshwater marshes, vernal pools, freshwater seeps, and riparian areas.

Under Section 404, activities in Waters of the U.S. may be subject to either an individual permit or a general permit, or may be exempt from regulatory requirements. Some activities have been given blanket authorization under the provisions of a general permit through the Nationwide Permit system. Individual Permits require the applicant to prepare and submit an alternatives analysis of the project.

Section 401 of the CWA and its provisions ensure that federally permitted activities comply with the federal CWA and state water quality laws. Section 401 is implemented through a review process conducted by the Regional Water Quality Control Board (RWQCB), and is usually triggered by the 404 permitting process. Specifically, the RWQCB certifies via section 401 that the proposed project complies with applicable effluent limitations, water quality standards, and other conditions of California law. If the RWQCB denies certification, the lead federal agency must deny the federal permit application.

b. State Policies and Regulations

The establishment and enforcement of water quality standards for the discharge into and maintenance of water throughout California is managed by the State Water Resources Control Board (SWRCB) and its nine RWQCBs. The SWRCB enforces the federal CWA on behalf of the EPA. Most of the quantitative objectives are based on the California Code of Regulations (CCR), Title 22 – State Drinking Water Standards. Other considerations include the University of California Agricultural Extension Guidelines for Agricultural Irrigation Use, the Porter-Cologne Water Quality Control Act, and the RWQCB's Non-degradation Policy. San Luis Obispo County lies entirely within Region 3 – Central Coast RWQCB. The RWQCB is the primary State agency ensuring that the quality of potable water supplies is protected from harmful effects by man.

The California Department of Health Services (DHS) is responsible for overseeing the quality of water once it is in storage and distribution systems. DHS oversees the self-monitoring and reporting program implemented by all water purveyors, performs inspections, and assists with financing water system improvements for the purpose of providing safer and more reliable service. DHS regulations, described in CCR Title 22, stipulate disinfection levels required for specific crops where disposal of treated effluent is by irrigation.

1) State Water Code

Section 10910 of the California Water Code (CWC) requires the County to identify the agency or entity responsible for providing water service to the area and to request that the agency determine whether the project was included within the current Urban Water Management Plan maintained by that water agency. If no such plan exists, or if the proposed project was not considered, then the agency must prepare a water supply assessment for the project. The assessment shall include a discussion as to whether the public agency or entities total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project. In addition, the agency's existing and planned future uses, including agricultural and manufacturing uses need to be taken into account. There are other specifications regarding the water supply assessment in the CWC, and the County must prepare the assessment if it is unable to identify a water supply agency. The implementation of this requirement is triggered by the County's determination that the project is subject to CEQA and is completed separate from but simultaneously to the CEQA process.

Section 13260(a) of the CWC requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, that could affect the quality of the waters of the State, file a report of waste discharge (WDR). All WDR's must

implement the applicable water quality control plan (Basin Plan) for the Region affected by the discharge. Therefore, WDR's require the project to comply with all applicable Basin Plan provisions, including any prohibitions and water quality objectives, governing the discharge. The siting, design, construction, operation, maintenance, and monitoring of all small domestic systems must comply with all of the applicable provisions of the RWQCB's Basin Plan. The project shall not discharge waste in excess of the maximum design and disposal capacity of the small domestic system. The discharger must comply with any more stringent standards in the Basin Plan. In the event of a conflict between the provisions of RWQCB Order No. 97-10-DWQ and the Basin Plan, the more stringent provision prevails. Where treated wastewater is applied to land by sprinkler or spray methods, the discharger shall manage wastewater application to prevent it from commingling with storm water runoff, or such runoff shall be fully retained.

2) The Porter-Cologne Water Quality Control Act of 1987

The Porter-Cologne Water Quality Control Act provides the authority and method for the State of California to implement its water management program. The act establishes waste discharge requirements for both point and non-point source discharges, affecting surface water and groundwater.

3) Safe Drinking Water and Toxic Enforcement Act of 1986

The Safe Drinking Water and Toxic Enforcement Act prohibits the discharge or release of any significant amount of chemical known to cause cancer or reproductive toxicity into the drinking water supply, by any person in the course of doing business.

4) The Groundwater Management Act of 1992 (AB 3030)

The Groundwater Management Act was designed to provide local public agencies with increased management authority over groundwater resources in addition to existing groundwater management capabilities. A key element of this law is the development and implementation of groundwater management plans.

5) California Department of Fish and Game

The California Department of Fish and Game (CDFG) is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. California law requires any person, agency, or public utility proposing a project that may impact a river, stream, or lake to notify the CDFG before beginning the project. If the CDFG determines that the project may adversely affect existing fish and wildlife resources, a Lake or Streambed Alteration Agreement is required. This Agreement lists the CDFG conditions of approval for the proposed project, and serves as an agreement between applicants and the CDFG.

c. Local Policies and Regulations

At the time of subdivision or building permit issuance, the County determines a project’s water demand and the availability of water for allocation to the project. The County influences the use of water for residential and non-residential purposes by considering the availability of water in the approval of development projects and has measures in place to reduce long-term impacts to

water supply. Long-term water supply is analyzed annually as part of the County Resource Management System (RMS).

The County Environmental Health Services is responsible under the provisions of Section 4.019.9 of the California Health and Safety Code for the regulation of water systems that fall under the state criteria of Public Water Systems. In 1991, the State assumed responsibility for regulation of these systems. However, budget problems have prevented the state from taking over as the actual service provider, and the State has contracted with County Health for continuation of these services. Environmental Health will continue to regulate systems with two to four connections under provisions of the County Code. Environmental Health also permits individual domestic wells.

Currently, all public water supply wells in the County are required by the local DHS office to be disinfected. They are charged with implementing the Groundwater Disinfection Rule that became effective in 2002.

The County Environmental Health Services regulates small water systems to assure that safe drinking water is provided to the public. Small water systems are defined as having between 15 to 199 service connections and regularly serving 25 or more individuals daily at least 60 days out of the year. The Environmental Health Services also regulates small water systems that are defined as having between five to 14 service connections and not regularly serving more than an average of 25 individuals daily for more than 60 days out of the year.

The County Environmental Health Services and the Central Coast RWQCB are the local agencies responsible for effluent treatment standards and siting of wastewater disposal fields. These agencies ensure that proposed projects conform to all applicable local standards. Since the proposed project includes on-site wastewater treatment and disposal, requirements that would be imposed on this project potentially affecting water resources include:

- Depth to groundwater (minimum vertical separation of five feet from the bottom of the disposal field for soils having percolation rates slower than 30 minutes per inch. Greater separation distances are required for faster percolation rates).

- Setbacks (minimum setback of 100 feet between disposal area and any water supply well, spring, or water course).

- Surface and Subsurface Irrigation Water Recycling (subject to Title 22 of California Code of Regulations for water reuse criteria).

The following policies are contained in the Central Coast RWQCB Basin Plan:

- Groundwater recharge with high quality water shall be encouraged.

- In all groundwater basins known to have an adverse salt balance, total salt content of the discharge shall not exceed that which normally results from domestic use, and

control of salinity shall be required by local ordinances, which effectively limit municipal and industrial contributions to the sewerage system.

- Wastewaters percolated into the groundwaters shall be of such quality at the point where they enter the ground so as to assure the continued usability of all groundwaters of the basin.

Section 22.22.150 Agricultural Lands Clustering (2002) of the Land Use Ordinance includes required findings related to water resources:

- The water resources and all necessary services are adequate to serve the proposed development, including residential uses as well as existing and proposed agricultural operations on the subject site and in the site vicinity (22.22.150.G.4).

Chapter 22.52 of the County's Land Use Ordinance (Title 22 of the County Code) contains site development standards for the County, including drainage, grading, erosion, and sedimentation control. Sections that are applicable to drainage, grading, erosion, and sedimentation are outlined below.

Section 22.52.010 (2002) states that the County's standards for grading and excavation are to minimize hazards to life and property; protect against erosion and the sedimentation of water courses; and to protect the safety, use, and stability of public rights of way and drainage channels. Grading must follow the standards provided in the Uniform Building Code (Section 3309) and the following standards:

- Areas of cut and fill are to be limited to the minimal amount necessary.
- Grading for a building site is prohibited on slopes of 30 percent or greater.
- Contours are to be blended with the natural terrain.
- Grading may not alter watercourses except as permitted through CDFG and various watercourse protection methods shall be followed.
- Areas where natural vegetation has been removed must be replanted by various approved methods.

Section 22.52.080 (2002) of the Land Use Ordinance states that standards for the control of drainage and drainage facilities are designed to minimize harmful effects of stormwater runoff and resulting inundation and erosion on proposed projects, and to protect neighboring and downstream properties from drainage problems resulting from new development. Erosion and sedimentation control to protect damaging effects on-site and on adjoining properties is discussed in Section 22.52.090 (2002) of the Land Use Ordinance. A sedimentation and erosion control plan would be required for future developments, and shall include temporary and final measures including:

- Slope surface stabilization including temporary mulching or other stabilization measures to protect exposed areas of high erosion potential during construction and interceptors and diversions at the top of slopes to redirect runoff;

- Erosion and sedimentation control devices such as absorbing structures or devices to reduce the velocity of runoff;
- Final erosion control measures including mechanical or vegetative measures.

Interim Low Impact Development (LID) Guidelines is a pilot project sponsored by municipalities in San Luis Obispo County and the Central Coast RWQCB. This is a joint effort to help reduce on-site stormwater runoff. Any project that creates more than 5,000 square feet of increased impervious surface is required to utilize at least two LID measures to help reduce stormwater runoff.

3. Thresholds of Significance

a. CEQA Guidelines

CEQA Appendix G (Environmental Checklist) states that a significant water resource impact would occur if the project:

- Substantially depletes groundwater supplies or interferes substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Requires or results in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental issues; or,
- Did not have sufficient water supplies available to serve the project from existing entitlements and resources.

For the purpose of the project specific-evaluation in this EIR, significant water supply and infrastructure impacts would occur if the demands placed on the area from this development exceeded the available water supply, there was a disruption in existing agricultural operations due to the newly created residential demand, or if the well capacity of adjoining parcels was diminished so as to create unsustainable yields or disruption of existing localized water supply. The conclusions regarding significance are influenced more by the adequacy of current and future supplies rather than by the magnitude of potential increased demands.

Criteria for evaluating the significance of hydrology and water quality impacts included in the CEQA Guidelines (14 CCR Appendix G) are directed toward identifying substantial changes in drainage patterns, drainage volumes, or violations of water quality standards. For the proposed project, the best interpretation of these guidelines relates to the potential to direct development in areas with existing drainage concerns and incrementally create significant cumulative impacts to an area such as runoff exceeding downstream capacity or an increase of off-site sedimentation resulting in significant siltation of surface water areas.
Impacts would be considered significant if development would result in any of the following:

- Potentially degrade surface or groundwater quality below standards established by the RWQCB;
- Substantially interfere with groundwater recharge;
- Substantially alter the existing drainage pattern of the area such that substantial erosion or siltation occurs;
- Substantially alter the existing drainage pattern or substantially increase the rate or amount of surface runoff in a manner which results in flooding;
- Create or contribute runoff which would exceed the capacity of stormwater drainage systems;
- Substantially add additional sources of polluted runoff to a water body; or,
- Place housing within a 100-year floodplain.

b. County of San Luis Obispo Initial Study Checklist

The County's Initial Study Checklist provides the following thresholds for determining significance with respect to water quantity and quality. Water quantity and quality impacts would be considered significant if the proposed project would:

- Violate any water quality standards;
- Discharge into surface waters or otherwise alter surface water quality (e.g., turbidity, temperature, dissolved oxygen, etc.);
- Change the quality of groundwater (e.g., saltwater intrusion, nitrogen-loading, etc.);
- Change the quantity or movement of available surface or ground water; and,
- Adversely affect community water service provider.

4. Impact Assessment and Methodology

a. Water Supply and Infrastructure

The impacts of any proposed development project are evaluated based on an assessment of project-related impacts on existing water supply, utilities, and service systems, as well as an assessment of site activities based on the intended land uses. The impact analysis determines if the proposed wells would be able to supply enough water to support the project, whether the underlying aquifers could supply the project and the existing and future agricultural uses, and if implementation of the project would have an adverse effect on the long-term sustainability of the aquifer.

The impacts of the proposed project were evaluated based on proposed water use requirements, which were derived from the maximum proposed density and intended use of the parcels, as identified in the project description. Water demand was determined through the use of water duty factors derived from several sources including: information contained in the Water Resource Study prepared by Cleath and Associates (2005) for the proposed project, Woodlands Specific Plan EIR (1998), and the County of San Luis Obispo Water Master Plan (CWMP, 1998). Water usage rates included in the 2005 Cleath report were obtained from the City of Arroyo Grande and the City of San Luis Obispo in addition to other sources.

Water usage estimates were revised following circulation of the Draft EIR (2008) based on modifications to the project components, including elimination of the equestrian center and incorporation of outdoor landscaping limitations (Cleath-Harris Geologists, 2010). All data and reports prepared prior to public circulation of the Draft EIR (2008), public comments received in response to the Draft EIR (2008), applicant comments and technical reports received in response to the Draft EIR (2008), and all supplemental documentation to support further analysis of hydrogeology and sustainable yield was peer reviewed by Geosyntec, a third-party independent consultant. Geosyntec provided a comprehensive assessment, including conclusions and recommendations, which are incorporated into this EIR section and impact analysis below.

b. Surface Water Quality and Quantity

An impact would occur if proposed use of groundwater decreases surface flows in Upper Los Berros Creek and its tributaries. An impact would occur if the proposed project results in development in areas with existing drainage concerns without careful consideration of the potential impact of runoff exceeding downstream capacity in the area. Potential impacts would be assessed based on site topography, the proposed layout and elevations of potential project components, the erodibility of soils, and the regulatory framework applicable to the project.

With respect to water quality, determining significance is more indirect because there are no specific discharge requirements or standards for storm water runoff that can be compared at this time. For the purposes of this EIR, the determination of significance is based on a review of typical construction site pollutants usually found on job sites that might contribute to disproportionate amounts of polluting materials in runoff. The SWRCB has not attempted to identify numerical limits to be achieved in runoff from construction sites. Instead, the General Order contains narrative restrictions referencing best available technology economically achievable and the best conventional pollution control technology. In addition, land disposal of treated wastewater is regulated by the RWQCB (refer to Section V.L., Wastewater, for additional discussion and analysis). Thus, the significance of water quality impacts will be judged in terms of conformance with these requirements and regulations.

5. Project-specific Impacts and Mitigation Measures

a. Project-wide

1) Sustainable Water Supply

The estimated total water demand of the project reported in the Draft EIR (2008) was 143 afy, based on analysis by Cleath and Associates (2005). This original demand factor assumed up to 30,500 square feet of on-site irrigated landscaping, with up to 7,000 square feet of turf per residential lot. Water conservation measures initially proposed by the applicant, which are intended to be incorporated into project design, include: the use of low-flush and low-flow appliances; insulation and circulation of hot water systems; minimized use of water for outdoor cleaning; use of drought-tolerant landscape plant species; use of automatic irrigation systems; use of water-conserving pumps and filters for swimming pools and spas; and regular maintenance of all appliances, systems, and facilities. In response to the Draft EIR (2008), the applicant proposed the following limitations on allowable landscaping: 1,500 square feet of irrigated landscaping, with up to 300 square feet of warm-season turf (maximum), and the

remaining landscaping as drought-tolerant, low-water use plants per residential lot. A dual-meter system would be installed at each residence to monitor indoor and outdoor water use separately.

The ranch headquarters and homeowners association facility would consist of an office, conference room, lounge, kitchen, and a swimming pool with hot tub. Demand for this facility is approximately one afy. The originally-proposed equestrian center has been removed from the project application. Implementation of water conservation measures would result in an estimated outdoor water demand for the project of up to 6.7 afy. Indoor use is estimated at 39.6 afy for a total project water demand of 46.3 afy, which is equivalent to approximately 29 gpm (continuous flow from one or more wells). Table V.B.-5 provides updated water demand estimates for the proposed project, in addition to existing water uses and proposed additional vineyards. The proposed project water demand (46.3 afy) and net gain of 27 acres of vineyard (9.2 afy) represents an approximately 26 percent increase in water demand relative to the baseline demand. Excluding the 27 acres of vineyards, the project would result in an approximately 22 percent increase in water demand. Total estimated water demand would be approximately 280 afy, which includes 46.3 afy estimated for the proposed project, 9.2 afy for the additional 27 acres of irrigated vineyards, and approximately 222.3 afy for existing uses (domestic, winery production, vineyards, and orchard). The project includes the use of approximately 37 afy of tertiary treated water for agricultural irrigation, which would contribute to groundwater recharge. Operation of the 75-unit dude ranch, which is not currently included in the current project application or Table V.B.-5 below, would require approximately 13 afy (Cleath and Associates, 2008).

TABLE V.B.-5
Estimated Project Water Demand

Project Component	Unit Type	Duty Factor	Number of Units	Water Demand (Indoor) (afy)	Water Demand (Outdoor) (afy)	Water Demand (Total) (afy)
Residential (one-acre lot)	Outdoor	0.0626	102	0	6.4	6.4
	Indoor	0.381	102	38.9	0	38.9
Ranch Headquarters	Per acre	0.72	1.4	0.7	0.3	1
Total Project Demand				39.6	6.7	46.3
Vineyards (proposed)	Per acre	0.34	27	0	9.2	9.2
Total Water Demand (proposed)				39.6	15.9	55.5
Existing Domestic	---	---	---	---	---	8.95
Existing Winery	---	---	---	---	---	5.3
Vineyards and orchards (existing)	Per acre	0.34	624.9	---	---	208
Existing Water Use				---	---	222.3
Total Water Use (existing plus proposed demand)						280

Sources: Cleath and Associates, 2005; Cleath-Harris, 2012; Geosyntec, 2011, 2012

An evaluation of the effects of the proposed project was prepared in order to document the anticipated water demand that would result from residential and the various related facilities included in the proposed project. CEQA states that a significant water resource impact would occur if the project: 1) substantially depletes groundwater supplies or interferes substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the groundwater table level; or, 2) if the project did not have sufficient water supplies available to serve the project from existing entitlements and resources.

Community water supply systems are required to have adequate source capacity to meet maximum daily demand (MDD) at all times. In accordance with State guidelines, Cleath-Harris Geologists estimated the MDD for the proposed project as 1.5 times the average daily demand (ADD) for the maximum demand month (June). The calculated project water demand in June is 4.06 af, which equates to 30.6 gpm for continuous flow. The MDD during June would be a factor of 1.5 higher, which is approximately 46 gpm (Cleath-Harris Geologists, 2010).

The estimated sustainable rate based on Phase 1 and 2 testing data and pumped from the four wells during Phase 3 was equivalent to 87 afy, or approximately 54 gpm, which exceeds the maximum MDD value of 46 gpm. Based on evaluation of the Phase 3 testing data and incorporation of measures to conserve base flow in Los Berros Creek (i.e., ceasing use of Well 11 during the dry season), the revised estimated viable long-term production rate is 62.4 afy, which equates to 38.7 gpm (less than the MDD of 46 gpm).

In summary, based on the testing data, the capacity of the wells is more than adequate to sustain a continuous flow of 46 gpm for one month. Moreover, water in storage tanks can be used to supplement groundwater pumping during short-term high demands. The estimates of viable long-term groundwater production rates are based on evaluation of water levels recorded in four wells for the period from October 2009 to March 2011, which included several months of pumping. Rainfall during the testing program was 138 percent of average. In addition, long-term yields of water wells producing from bedrock aquifers, which may have linear fracture systems, commonly are substantially less than short-term yields. Nonetheless, long-term groundwater production rates of 21 afy for each of two irrigation wells at the project site (Cleath-Harris Geologists, 2010) supports that 62 afy is a viable long-term groundwater production rate for the four project wells combined.

Due to the size of the proposed project, an on-site water company that manages well pumping rates water quality health standards, maintenance of the system, and other tasks associated with domestic water treatment and delivery is proposed. In addition, according to the *Management and Buffers Plan*, use of groundwater for irrigation may be limited during drought conditions. In the event of a water supply shortage, mandatory water conservation measures (listed in the applicant's proposed priority for implementation) would include: 1) increases in residential water rates and/or penalties to encourage water reductions; 2) a reduction or moratorium on irrigation for residential landscaping; 3) a reduction or moratorium on irrigation for common area and homeowners association facility landscaping (unless served by reclaimed water); 5) a prohibition on water use for swimming pools and spas; 6) mandatory water allocations for residential users; 7) potential purchase of water from an off-site party; and, 8) reduction or periodic cessation of agricultural irrigation. Implementation of the proposed policy to reduce agricultural irrigation at

the benefit of the proposed residential and facility development may significantly affect on-site agricultural production.

Based on the above analysis of groundwater supply conditions (i.e., CEQA thresholds of significance, which state there is a significant impact if a proposed project does not have sufficient water supplies available to serve the project from existing entitlements and resources), and incorporation of water conservation measures identified in the Draft EIR (2008) and proposed by the applicant, the proposed water source is adequate to serve the project because the estimated project demand (46.3 afy) is less than the estimated sustainable yield (62.4 afy) for Wells 10, 11, 14, and 15. Existing agricultural wells would continue to serve as a water source for vineyard and orchard irrigation (existing and proposed). Further discussion of the project's effect on surface and groundwater is presented below, including effects to Los Berros Creek and well interference.

(f) Effects to Groundwater

Continuing general decline of water levels in Wells 10, 14, and 15 during the three phases of pumping indicates that stable equilibrium groundwater conditions were not attained, and continued decline in water levels at three of the four wells during the Phase 3 pumping indicates that the 87 afy sustainable yield estimated by Cleath-Harris Geologists (2010) will not result in full recovery to "the Phase 1 operational static water levels," but will cause additional depletion of groundwater storage.

The projections of downward water level trends exhibited during testing and the unknown time to possibly achieve equilibrium pumping conditions underscores that time frame is an important issue with respect to long-term viability of the wells to meet the proposed project demands. Climate change is predicted to result in rainfall occurring in fewer and more intense periods (DWR, 2002), which would likely result in more runoff, perhaps less recharge to groundwater, and possibly long-term decrease in base flow of creeks.

As described in Section 5.c (Sustainable Yield) and quantified by Geosyntec (2011), the revised estimate of sustainable yield from the four wells is approximately 62.4 afy, which equates to an average pumping rate of 38.7 gpm. This sustained yield for the four domestic wells is more than the estimated demand; therefore, the long-term use of these wells at the recommended sustainable rate would not have a significant adverse effect on underlying groundwater.

(g) Effects to Los Berros Creek

The production capacity of Well 11 was substantially higher than the other wells; however, the rapid recharge response, close proximity to the creek, and dropping water level beginning in June even without pumping indicates that the production capacity of Well 11 is dependent on base flow in Los Berros Creek and will likely decrease during summer and drought conditions. Moreover, pumping from Well 11 during late summer and autumn would likely substantially reduce base flow in the Los Berros Creek channel. During the months of August through November, the proposed pumping rate from Well 11 exceeds 30 percent of the average flow in Los Berros Creek.

In the long-term, an estimated total 22 to 26 percent increase in total groundwater production may decrease baseflow of Los Berros Creek, and subsequently downstream wells. Therefore, water production limitations are recommended for Wells 10 and 11, and curtailment of pumping from Well 11 is recommended from August through November when creek flows are lowest. Well 15 is the deepest of the four wells and has the largest available drawdown between the water level attained during Phase 3 pumping and the top of screen (approximately 80 feet). Consequently, a production rate from Well 15 that results in continuing gradual drawdown is more sustainable at Well 15 than at the other wells. Accordingly, the recommended long-term viable production rate for Well 15 includes a 25 percent increase to the revised calculated sustainable pumping rate for Well 15 based on the Phase 3 production and recovery. Compliance with the recommended pumping schedule is necessary to avoid significant adverse impacts to Los Berros Creek.

(i) Interference

The supplemental analysis conducted by Geosyntec included review of hydrographs for onsite Wells 5, 8, 9, 12, and 13; these wells were instrumented with transducers and data loggers. Daily rainfall and the test pumping schedule are included on the hydrographs to facilitate evaluation of potential influence of both rainfall recharge and the project test pumping on water levels in these wells (refer to Appendix B).

The hydrograph for Well 8, which is completed in shallow alluvium along Los Berros Creek, shows a rapid 30-foot increase in water level in response to abundant rainfall in December 2010 and January 2011. Although discontinuous water level records and uncertainty about pumping limit interpretation, the hydrographs for Wells 5 and 9, which are completed in the Obispo Tuff, also show increases in water level following periods of abundant rainfall. Water level rise is particularly evident in Well 9 in response to the heavy rainfall in December 2010 and January 2011.

Hydrographs for Wells 12 and 13, which are deeper and completed within the Monterey Formation, show only a few feet of fluctuation in water level over the entire period of the testing program. Although these wells show an increase in water level in the range of two to four feet that is clearly related to the heavy rainfall in December 2010 and January 2011, time frame for replenishment of groundwater flowing within the deeper Monterey Formation aquifers is expected to be much longer (i.e., years, decades, or more).

Water levels recorded in Wells 5, 9, 12, and 13 during the testing program show no significant response to the three phases of pumping from Wells 10, 11, 14, and 15. No water level monitoring data are available from offsite wells such as the Tremper and Fitzgerald Wells to evaluate potential interference between the project wells and off-site wells during the production testing conducted at Wells 10, 11, 14, and 15. Based on available data, pumping from the project wells is not expected to provide significant drawdown interference with other wells due to the additive overlap of the pumping cone of depression. However, production rates from other wells in the area could decrease if pumping from project wells is conducted in excess of sustainable yields of the aquifers, which would result in general lowering of the water levels due to depletion of groundwater storage. Although there are only a few data points for Wells F&T-1, F&T-2,

FVW-1, and FVW-3, over periods of several years, the data show a general decline in groundwater elevation at these wells over 30 years.

With the exception of Well 9, the historical water supply for the vineyards and existing facilities are over a mile away from proposed domestic wells. The relatively close proximity of Well 9 (agricultural) to Wells 10 and 11 (proposed domestic supply), and the fact these wells all tap groundwater within fractures in the Obispo Tuff, is cause for concern that the long-term production rate of Well 9 may decrease with operation of Wells 10 and 11. Therefore, compliance with the sustainable pumping rates identified for each proposed domestic well is recommended to avoid adverse effects to on and offsite wells.

As noted above, Wells 11, 12, and 13 are influenced by, and influence in turn, flow within Los Berros Creek. Use of these wells during the dry season would subsequently affect stream flow and availability of water downstream. The applicant proposes to eliminate use of Wells 12 and 13 to avoid this identified potential impact. Based on further analysis of Wells 10 and 11, production and use limitations are recommended to avoid effects year-round, and particularly during the dry season (refer to analysis above and Appendix B). Based on implementation of these measures, and compliance with the recommended pumping limitations and schedule, potential effects due to interference would be less than significant.

WAT Impact 1 **Development of the proposed project would potentially result in a direct, long-term impact to the surface and groundwater quantity if over-pumping or inefficient use of available domestic water resources occurs.**

WAT/mm-1 At the time of application for subdivision improvement plans, the applicant shall prepare a Water Master Plan for approval by the County Department of Planning and Building and Environmental Health Services. The Water Master Plan shall be developed by a County-qualified consultant with experience specific to interior and exterior water usage for each type of approved use (e.g., the residential landscape watering section would be prepared by a landscape architect or contractor familiar with the area's vegetation to provide guidelines for residents covering water conservation techniques, and lists of ornamental drought-tolerant plants that would do well in the native soils, etc.). The program shall address all consumer-controlled water uses (e.g., landscaping, washing, showers, etc.). Once the program is developed, the plan shall also specify how this information will be disseminated to all future home builders and residents.

a. The Water Master Plan shall show how the initial landscaping will have low-water requirements. As applicable, at a minimum, the following shall be used: (1) all common area and residential irrigation shall employ low water use techniques (e.g., soil moisture sensors, drip irrigation); (2) residential landscaping shall be limited to 1,500 square feet (maximum), with turf area limited to 300 square feet, and with remaining landscaping being drought-tolerant and having low water

requirements (e.g., use of native vegetation, etc.); and (3) all common area landscaping shall use no turf or other water intensive groundcover and will use ornamental native plants where feasible.

b. The Water Master Plan shall include a Drought Water Management Program, which shall provide guidelines on how all land uses shall be managed during "severe" drought (drought exceeding three years), including landscaping. These measures would go into effect during periods of "severe" drought. This plan shall include, but is not necessarily limited to:

    1. The definition of a "severe" drought year (as defined by National Oceanic and Atmospheric Administration's Palmer Drought Severity method or other similarly recognized methodology);
    2. Identification of general measures available to reduce indoor water usage for future development;
    3. Identification of specific measures to be applied for landscape watering;
    4. Determination of appropriate early triggers to determine when "severe" drought conditions exist and process for initiating additional water conservation measures for tract and future development; and,
    5. Proposed drought-management policies shall not include a "reduction or periodic cessation of agricultural irrigation".

    Once it is determined that a "severe" drought condition exists, restricted (drought) water usage measures shall remain in effect until it is shown satisfactorily to the County that the "severe" drought condition no longer exists.

c. The Water Master Plan shall include provisions that operations of the domestic water system would be monitored in accordance with all applicable standards and regulations using a certified operator(s) to oversee well pumping, storage, distribution, maintenance of the system, and overall water quality in accordance with all State and County requirements. The Water Master Plan shall delineate all domestic wells, pump stations, water tanks, and pipelines, and include a schedule and maximum production rate for each well by month. The Water Master Plan shall incorporate the following restrictions:

    1. Use of Well 11 shall be prohibited during the months of August through November.
    2. Maximum yield for Well 10 shall not exceed 4.0 gpm (6.5 afy).
    3. Maximum yield for Well 11 (during the months of December through July) shall not exceed 26.1 gpm (28.1 afy).
    4. Maximum yield for Well 14 shall not exceed 5.6 gpm (9.1 afy).

5. Maximum yield for Well 15 shall not exceed 11.6 gpm (18.8 afy).
6. Total maximum yield (including Wells 10, 11, 14, and 15) shall not exceed 38.7 gpm (62.4 afy).

d. The Water Master Plan shall be administered by the Mutual Water Company and enforced by the Homeowners Association. The Mutual Water Company shall prepare an annual report documenting (at a minimum): water use per residence and for the ranch headquarters; pumping rates for Wells 10, 11, 14, and 15; quantity and rate of tertiary treated water disposal; water loss summary; maintenance activities and corrective actions; and compliance with the conditions of the Water Master Plan. The annual report shall be stamped by a Registered Engineer. The Homeowners Association shall submit the annual report to the County Public Health Services and County Planning and Building Department, and the approved Water Master Plan and annual report shall available for review at the ranch headquarters. In the event the Mutual Water Company and Homeowners Association are out of compliance with the Water Master Plan, no additional building permit, operational permit, or business license will be issued until any identified remedial work has been completed.

WAT/mm-2 Prior to approval of subdivision improvement plans, and upon submittal of the Water Master Plan, the applicant shall provide funding for a County-qualified consultant to conduct an independent review of the Water Master Plan. The applicant shall provide a scope of work and cost estimate from the County-qualified consultant, to be reviewed and approved by the County of San Luis Obispo. The County-qualified consultant shall be under contract to the County of San Luis Obispo. Costs of the independent review, and any county administrative fees, shall be paid for by the applicant.

WAT/mm-3 At the time of application for subdivision improvement plans, the applicant shall submit revised plans showing the use of tertiary treated effluent to provide irrigation for common area landscaping in a manner consistent with the Basin Plan. These plans shall be incorporated into the Water Master Plan, including, but not limited to, proposed infrastructure and irrigation application rates and schedules.

WAT/mm-4 At the time of application for subdivision improvement plans (for common areas) and prior to permit issuance (for individual lots), the following measures shall be shown on applicable plans for landscaped and turf areas, consistent with the approved Water Master Plan:

a. To maximize drought-tolerance and minimize water usage, warm season grasses (excludes bermuda grass) such as buffalo grass, shall be used;

b. A computerized irrigation controller shall be installed that can estimate cumulative evapo-transpiration losses to establish the most efficient and effective watering regimes;
c. To minimize establishment of shallow roots, the following shall be avoided on turf areas, and provided in all applicable documents (e.g., educational brochure, Covenants, Conditions and Restrictions [CC&Rs], landscape plans): close mowing, overwatering, excessive fertilization, soil compaction and accumulation of thatch; and,
d. Watering times shall be programmed for longer and less frequently rather than for short periods and more frequently.

WAT/mm-5 Prior to issuance of building permits for individual lot development and the homeowners association facility, recreation center, and community center, proposed construction plans shall include indoor water conservation measures identified in the approved Water Master Plan including, but not limited to: low water-use toilets, showerheads, and faucets; automatic shut-off devices for bathroom and kitchen faucets or installation of high efficiency toilets; and point-of-use supplemental water heater systems or circulating hot water systems in bathrooms and kitchen. For structures where the pipe from the hot water heater to any faucet is greater than 20 feet in length, apply one or more of the following: 1) install a hot water pipe circulating system for entire structure; 2) install "point-of-use" water heater "boosters" near all hot water faucets (that are greater than 20 linear pipe feet from water heater), or 3) use the narrowest pipe possible (e.g., from 1- to ½-inch diameter). This measure shall be included on an additional map sheet prior to recordation of the final map and incorporated in the Covenants, Conditions, and Restrictions.

WAT/mm-6 Prior to issuance of construction permits for individual lot development, the applicant shall submit landscape plans for the proposed parcels that include the following outdoor conservation measures identified in the approved Water Master Plan: limited irrigated landscape area of 1,500 square feet (maximum), turf area limited to 300 square feet, with remaining landscaping being drought-tolerant and having low water requirements (e.g., use of native vegetation), and incorporation of soil moisture sensors, and drip irrigation systems. This measure shall be included on an additional map sheet prior to recordation of the final map and incorporated in the Covenants, Conditions, and Restrictions.

WAT/mm-7 Prior to issuance of construction permits, the applicant shall pay a supplemental water development fee for each residential unit as required by County Ordinance. This measure shall be included on an additional map sheet prior to recordation of the final map and incorporated in the Covenants, Conditions, and Restrictions.

WAT/mm-8 At the time of application for subdivision improvement plans, plans shall show that water meters shall be installed at all wells providing water to the proposed project (potable and non-potable uses), and for each approved use/building, consistent with the approved Water Master Plan. All common landscaped areas and structures being provided water shall install a water meter. Monthly meter readings shall be taken at all meters and evaluated for possible water loss from pipes. Should a greater than 15 percent loss of delivered water be shown (or loss amount determined appropriate by the County Public Health Services), the leaking pipe(s) within the development shall be identified and replaced within 60 days from when the leak is detected.

Residual Impact The preparation, implementation, and enforcement of a comprehensive Water Master Plan is required to ensure that the use of onsite wells to support the project would not have an adverse effect on ground and surface waters, including Los Berros Creek. While the project would require additional water use, compliance with restrictive measures related to use and production are recommended for the life of the project to support a conclusion that the proposed water source is sustainable, and would not have a significant adverse effect on water resources and agricultural production (both on and offsite).

With implementation and enforcement of the above measures, the project's effect on water supply would be considered *less than significant with mitigation, Class II*.

2) Drainage and Flooding

Implementation of the proposed project, including all phases of development, would create additional impervious surfaces including rooftops, paved roads, driveways, and parking areas. Based on the hydrology report submitted by the applicant, and peer reviewed by the EIR consultant, implementation of the project would result in a 2.8 percent increase in net peak runoff during a 100-year storm (RRM Design Group, 2004). Table V.B.-6 below shows the net increase of run-off for 10-year, 25-year, and 100-year storm events.

Based on the hydrology report, increases in flow rates over existing conditions would occur for approximately five minutes during storm events, before dropping to existing peak runoff rates. The report states that the peak increase in project-generated runoff would occur prior to the peak flow rate within Los Berros Creek; therefore, the amount of peak flow-rate increase would not result in a significant increase in offsite runoff rates. However, current regulations state that "post-development peak stormwater runoff discharge rates shall not exceed the estimated pre-development rate" (County of San Luis Obispo, 2011).

TABLE V.B.-6
Net Peak Runoff Rate

Storm Event	Existing Conditions (cfs)	Proposed Project Conditions (cfs)	Percent Increase
10-year	2,806	2,931	4.4
25-year	3,527	3,662	3.8
100-year	5,424	5,575	2.8

Source: RRM Design Group, 2004

The proposed project's drainage plan includes the use of over-side drains and low-point drainage inlets within roadways to facilitate stormwater flow into existing natural drainages onsite (refer to Figures III-20 through III-26). Culverts would be installed at each proposed drainage crossing. Stormwater runoff would be discharged into a series of existing natural ditches and swales prior to entering Los Berros Creek. No onsite water stormwater detention basins are proposed. Although the proposed tract map is vested, compliance with current regulations specific to stormwater runoff is recommended to mitigate drainage impacts to the maximum extent feasible. Elements that would be incorporated into the tract-wide improvement plans include Best Management Practices (BMPs) and Low Impact Development (LID) design techniques. Individual lot development should incorporate design techniques, including but not limited to strategies identified in the *San Luis Obispo County Homeowner's Guide to Rainwater Management for Low Impact Development* (San Luis Obispo Coalition of Appropriate Technology [SLO-COAT], 2010). For example roof runoff should be directed to drainage swales and not to impervious surfaces, rain barrels, stormwater ponds, bio-retention systems, or other methods as approved by the County Public Works Department. Implementation of these measures, consistent with current ordinance requirements, would promote groundwater recharge and mitigate potential draining and stormwater impacts to less than significant.

WAT Impact 2 **Implementation of the proposed project would create additional impervious surfaces, and would result in a net increase in peak stormwater discharge, resulting in a potentially significant impact.**

WAT/mm-9 Prior to recordation of the final map, the applicant shall comply with the following requirements, which shall apply to both subdivision tract improvements and individual lot development, and shall be submitted to the County Department of Public Works for review and approval:

a. Stormwater Quality Plan incorporating LID Standards, consistent with Land Use Ordinance Section 22.10.155.G.1, including but not limited to the following options:
   1. Parking lots shall be designed to drain to vegetated depressions, rain gardens, or open areas to allow for stormwater infiltration.
   2. Roof runoff should be directed to landscape areas (rain gardens) and / or vegetated drainage swales and shall not be directed to impervious surfaces that have the potential to contain pollutants.

3. Vegetated drainage swales shall be constructed along the access driveway and discharge to an approved location in a non-erosive manner.
4. Pavement disconnection within the parking area.
5. Other measures, as approved by the County Planning Department in consultation with Public Works.

b. BMPs and associated long-term maintenance plan, consistent with Land Use Ordinance Sections 22.10.155.G.7 and 22.10.155.G.8.
c. Final drainage plan consistent with Land Use Ordinance Section 22.52.110, demonstrating that post-development peak stormwater runoff discharge rates shall not exceed the estimated pre-development rate.
d. These measures shall be implemented prior to final inspection.
e. These measures shall be included on an additional map sheet prior to recordation of the final map and incorporated in the Covenants, Conditions, and Restrictions.

WAT/mm-10 At the time of application for construction permits for individual lot development, the applicant shall show on the construction plans, project designs that will promote groundwater recharge (22.52.140) by application of Low Impact Development (LID) design techniques. At least three designer selected LID/stormwater runoff reduction measures shall be applied to the project, including but not limited to the following options:

a. Roof runoff should be directed to landscape areas (rain gardens) and / or vegetated drainage swales and shall not be directed to impervious surfaces that have the potential to contain pollutants.
b. Vegetated drainage swales, buffers, and strips shall be constructed along the access driveway and discharge to an approved location in a non-erosive manner.
c. Landscape plans shall incorporate tree boxes to capture and infiltrate stormwater runoff.
d. Pavement features shall be permeable where feasible.
e. Soil amendments shall be applied to increase infiltration rates.
f. Rain barrels and cisterns shall be used to reduce stormwater runoff.
g. Other measures, as approved by the County Planning Department in consultation with Public Works.

This measure shall be included on an additional map sheet prior to recordation of the final map and incorporated in the Covenants, Conditions, and Restrictions.

Residual Impact Implementation of the project would create additional impervious surfaces, and would increase the potential for additional stormwater runoff. While the tentative map is vested, mitigation is included to ensure compliance with existing regulations and policies related to stormwater,

drainage, and LID. With implementation of the above measures, this impact would be considered *less than significant with mitigation, Class II*.

3) Water Quality

(a) Construction-related Sedimentation and Pollutant Discharge

During construction activities for all proposed phases of development, grading operations would require the removal of vegetation, disturbance of soil layers, and the creation of soil stockpiles. This would expose large areas of soil to the erosive forces of rainfall and runoff as storm water leaves the project site. The severity of erosion hazard impacts would be high based on the steepness of natural topography and proposed cut and fill slopes. The adverse effects of erosion and sediment transport include deposition of sediment within downstream drainage structures, which may increase the risk of localized flooding and the introduction of sediment into surface waters and sensitive habitats.

Construction activities could also affect water quality due to the potential for pollutants to be discharged to surface water bodies. Construction of the proposed project would involve the use, fueling, and storage of heavy equipment onsite. Soil and associated building material has the potential to enter a stream and drainage channels, cause an increase in suspended sediments, sedimentation of aquatic habitat, and introduce compounds that could potentially be toxic to aquatic organisms. Construction materials such as fuel, oil, paints, and concrete could be harmful to aquatic species if released into the environment. In addition, construction of roadbeds and structures requires use of asphalt, cement and concrete, and adhesives. These materials can be sources of pollutants in storm water discharges. These impacts during the construction phase of the project are potentially significant.

During project construction, a number of techniques are available to reduce the potential for erosion, sedimentation, and introduction of pollutants into runoff water and downstream sensitive habitat. Implementation of the proposed project improvements, construction of facilities, and installation of infrastructure would result in disturbance exceeding one acre; therefore, a Stormwater Pollution Prevention Plan (SWPPP) would be required. The SWPPP would evaluate the minimum required BMPs identified in the SWPPP Preparation Manual. BMP examples would include: erosion control barriers such as silt fences, hay bales, drain inlet protection, and gravel bags; preservation of existing vegetation to the maximum extent feasible, and; stabilization of disturbed areas with vegetation or hard surface treatments upon completion of construction in any specific area. All inactive disturbed soil areas are required to be stabilized with both sediment and temporary erosion control prior to the onset of the rainy season (October 15 to April 15). The best approach to minimizing the potential for erosion is to minimize the time during which bare soil is exposed to the elements. To achieve this goal, construction should be scheduled to occur during the dry season of the year to the extent practicable and the paving and landscaping operations should be completed as quickly as possible. In the event construction activities occur during the rainy season (October 15 to April 15), additional erosion and sedimentation control measures are necessary to ensure construction impacts are minimized.

WAT Impact 3 **Vegetation removal, grading, trenching, and construction activities associated with all phases of development, including tract improvements, facility construction, individual lot development, and**

utility installation would result in erosion and down-gradient sedimentation and pollutant discharges (e.g., sediment, oil, fuel, materials) into sources of surface water, including Los Berros Creek and its tributaries.

WAT/mm-11 Prior to issuance of construction permits and prior to ground disturbance for all development, the applicant shall submit a detailed sediment and erosion control plan pursuant to Land Use Ordinance Section 22.52.090 and County Code Title 8 Chapter 8.68 (Stormwater Pollution Control and Discharge Ordinance) for approval, which shall address both temporary and permanent measures to control erosion and reduce sedimentation. Erosion and soil protection shall be provided on all cut and fill slopes. Revegetation shall be facilitated by mulching, hydro-seeding or other methods, and shall be initiated as soon as possible after completion of grading, and prior to the onset of the rainy season (October 15). Permanent revegetation and landscaping shall emphasize drought-tolerant perennial ground coverings, shrubs, and trees, to improve the probability of slope and soil stabilization without adverse impacts to slope stability due to irrigation infiltration and long-term root development. If vegetation is included as the means to stabilize the soils, it shall be planted at least 30 days before the beginning of the wet season, and watered regularly to ensure adequate root establishment. Otherwise, non-vegetative means shall be employed. All plans shall show that sedimentation and erosion control measures are installed prior to any other ground disturbing work.

This measure shall be included on an additional map sheet prior to recordation of the final map and incorporated in the Covenants, Conditions, and Restrictions.

WAT/mm-12 Prior to issuance of construction permits and prior to ground disturbance, the applicant shall prepare and submit a Notice of Intent and SWPPP to the RWQCB or SWRCB in accordance with the requirements of the State General Order related to construction projects. The SWPPP shall identify storm water management procedures, pollution control technologies, spill response procedures, and other means that will be used to minimize erosion and sediment production and the release of pollutants to surface water during construction. Compliance will be verified by the County Environmental Monitor through submission of compliance reports. A copy of the SWPPP shall be submitted to the County for approval to show that sedimentation and erosion control measures are installed prior to any other ground disturbing work.

This measure shall be included on an additional map sheet prior to recordation of the final map and incorporated in the Covenants, Conditions, and Restrictions.

WAT/mm-13 Prior to issuance of grading permits, the applicant shall incorporate Natural Resource Conservation Service (NRCS) Field Office Technical Guide (FOTG) practices into all grading, erosion, and sedimentation control plans. The NRCS or the Upper-Salinas-Los Tablas Resource Conservation District can be contacted at (805) 434-1036 for assistance in implementing FOTG practices.

This measure shall be included on an additional map sheet prior to recordation of the final map and incorporated in the Covenants, Conditions, and Restrictions.

Residual Impact Implementation of the project would create additional impervious surfaces, and would increase the potential for additional stormwater runoff and discharge of pollutants into surface waters. While the tentative map is vested, mitigation is included to ensure compliance with existing regulations and policies related to stormwater, drainage, and water quality. With implementation of the above measures, this impact would be considered *less than significant with mitigation, Class II.*

(b) Operational Sediment and Pollutant Discharge

Implementation of the proposed project would create additional impervious surfaces, and would potentially result in increased concentrations of water pollutants (e.g., oils, fuels, and other hydrocarbons) in stormwater runoff. In addition, the proposed project would discharge collected stormwater into natural swales and ditches, which would gather sediment and transfer that sediment into Los Berros Creek. Another potential impact example would be the design of culverts, specifically at their outlet. If rock or hard surfaces are not placed at the outlet of a culvert, the water, which has been concentrated in the culvert, has more energy to cause erosion when it reaches the ground surface. This eroded material is then transferred downstream and deposited when the velocity of the water flow is decreased. If designed correctly and maintained, culverts would effectively transport runoff from storms to a natural water body while not degrading the quality of that water. If stormwater management systems for project-wide tract improvements and individual lot development are not properly designed and maintained, potential impacts could occur from future development of the proposed project.

WAT Impact 4 **The creation of additional impervious services may result in accelerated and concentrated stormwater runoff within natural drainages, causing gully erosion, down-gradient sedimentation, and discharge of fuel, oils, and other hydro-carbon based pollutants into sources of surface water including Los Berros Creek.**

Implement WAT/mm-9 and WAT/mm-10.

WAT/mm-14 Prior to issuance of construction permits for tract improvements, the applicant shall submit plans incorporating best management practices to reduce diffuse stormwater (e.g., rip-rap or other technologies). The plan shall also demonstrate how pollutants will be removed from stormwater

runoff prior to discharge into natural drainage courses. Proposed methods may include, but not be limited to, filter blankets or particulate filters. The Homeowners Association shall be responsible for the long-term maintenance of stormwater management facilities and infrastructure.

Residual Impact Implementation of the project would create additional impervious surfaces, and would increase the potential for additional stormwater runoff and discharge of pollutants into surface waters. While the tentative map is vested, mitigation is included to ensure compliance with existing regulations and policies related to stormwater, drainage, and water quality. With implementation of the above measures, this impact would be considered *less than significant with mitigation, Class II*.

b. Phase One

1) Wastewater Treatment Facility

(a) Water Supply

The project site is located within the Oceano HSA (SWRCB, 2002). Groundwater depth in the area of the proposed disposal area is approximately over 15 feet below ground surface. Using a required minimum separation of five feet from the ground surface and depth to groundwater, adequate separation to groundwater would exist. Given the fact that the treatment level of the wastewater would be tertiary-disinfected (well above typical discharge requirements), depth to groundwater is not anticipated to be a significant impact.

(b) Water Quality

Two lined wet weather storage ponds are proposed to facilitate management of the treated domestic effluent (refer to Figures III-13 and III-14). Domestic recycled water would be stored separately from winery process recycled water in an adjacent storage pond. Well 6 is located immediately adjacent to and down gradient from the disposal field area. The applicant proposes to implement a 100-foot setback between the treated wastewater application area and Well 6 and outer perimeter of vineyards. Well 6 is a pre-existing agricultural supply well, and would not be used to supply domestic water for residential uses. The proposed disposal area is located outside of the 100-year flood plain and maintains a 100-foot setback from all wells, springs, and creeks (refer to Figure III-16).

Surface waters near the proposed disposal field include Los Berros Creek, which flows in a southwesterly direction along the south/eastern edge of the property. Los Berros Creek is located down gradient approximately 200 feet southeast of the proposed disposal area. There are also several small spring-fed tributary streams feeding Los Berros Creek that border the east side of the property along Upper Los Berros Road. Los Berros Creek has been designated as having multiple beneficial uses in the RWQCB's Central Coast Basin Plan. Due to the close proximity and topographic conditions existing between the proposed disposal area and Los Berros Creek, the potential exists that if system failure occurs, treated effluent has the potential to flow directly into the creek. Adequate measures should be taken to assure that flood or surface drainage waters do not erode or otherwise damage the discharge facilities. The applicant proposes two feet of freeboard, and operation of an alarm system in the event of high waters. The applicant

shall be required to demonstrate management and maintenance of the facility for the life of the project, feasibility and response of emergency contingency measures, and compliance with regulations specific to the treatment, storage, and disposal of wastewater (i.e., CCR Title 22, Basin Plan, County Land Use Ordinance). Based on the required compliance with existing regulations, and preparation and implementation of an emergency contingency plan to avoid or minimize accidental release of effluent into Los Berros Creek, potential impacts to water quality would be less than significant.

WAT Impact 5 **Incidental failure of treated effluent storage facilities could result in over-topping or sudden accidental release of treated effluent resulting in direct impacts to Los Berros Creek.**

Implement WW/mm-1:

WW/mm-1 Prior to issuance of construction permits for the wastewater treatment plant and associated collection, storage, and disposal facilities, the applicant shall prepare and submit project-specific emergency contingency plan including health and safety procedures, implementation of best available technology to ensure de-chlorination and oxidization of treated effluent, and specific operation and maintenance instructions for all system components and equipment during normal operation and in case of reasonable emergency situations. The plan shall also identify emergency notification procedures for alerting onsite and downstream users whenever an unauthorized release of project-generated effluent occurs. Emergency notification should be given as soon as the release is discovered so that downstream well users have adequate response time to take any appropriate measures. In addition to required permits and authorizations, the plan shall be submitted to the Central Coast Regional Water Quality Control Board, County Department of Public Works, and County Public Health Services for review and approval.

This measure shall be included on an additional map sheet prior to recordation of the final map.

Residual Impact The development and operation of facilities for wastewater collection, treatment, and disposal creates a potential source of pollutants, which may adversely affect ground and surface waters in the event of an unanticipated incident (i.e., leak, spill, malfunction). These risks are considered in the preliminary design of the facility, and will be further evaluated by the County of San Luis Obispo and Regional Water Quality Control Board. In addition to compliance with standard regulations, and proposed design features to prevent an adverse effect to water resources, mitigation is recommended to include the preparation of a project-specific emergency contingency plan to address unexpected events. With implementation of the above measure, this impact would be considered *less than significant with mitigation, Class II.*

6. Cumulative Impacts

a. Water Supply

The proposed project would be supplied by the newly developed groundwater resources located on the project site. Due to the fractured subsurface geology that underlies the project site, the wells proposed for use tap into individual aquifers. Under average rainfall conditions, operation of the proposed project would not have a significant effect on the Oceano HSA; however, during the dry season, use of Well 11 may influence flow within Los Berros Creek. This effect would be exacerbated by prolonged drought conditions (over three years). As previously noted, water levels have declined over the past 30 years on the project site, and comments received from landowners in the immediate area in response to the Draft EIR (2008) have noted a decline as well. Due to similar geology in the area, and the cumulative use of off-site wells within and near the creek, this effect may also occur on adjacent properties within the Los Berros Creek watershed, resulting in a significant cumulative effect on water resources.

The proposed project would result in an approximately 22 to 26 percent increase in water production, compared to baseline conditions. The use of wells near the creek, including agricultural Well 9 and proposed domestic Wells 10 and 11, may contribute to reductions in Los Berros Creek baseflow. Project-specific mitigation measures are recommended to reduce overall water usage, ensure implementation of domestic water conservation measures during drought conditions, comply with recommended water production rates for domestic Wells 10 and 11, and avoid use of Well 11 during the driest part of the year (August through November). Implementation of these measures would reduce the project's contribution to this cumulative impact.

WAT Impact 6 **During prolonged drought conditions, operation of the proposed project would contribute to the cumulative reduction of available water supply within the Los Berros Creek watershed, and the reduction of downstream flow.**

Implement WAT/mm-1 through WAT/mm-8.

Residual Impact The continued use of water resources within the Los Berros Creek Watershed will have an adverse effect on the availability of water within and adjacent to the creek. While agricultural water use is not under the discretion of the County, strict measures can be applied to other uses, such as residential development, to minimize the project-specific effect on water supply. While the project would contribute to increased water demand, compliance with restrictive measures related to use and production are recommended for the life of the project to support a conclusion that the proposed water source is sustainable, and would not have a significant adverse cumulative effect on water resources and agricultural production (both on and offsite). With implementation of the above measures, this impact would be considered *less than significant with mitigation, Class II*.

b. Drainage

Implementation of the proposed project, in addition to future adjacent residential and agricultural development within the Los Berros Creek watershed would potentially interfere with natural drainage patterns and peak runoff discharge rates. The applicant proposes to maintain existing drainage patterns by allowing stormwater to discharge into existing natural swales, which direct runoff into Los Berros Creek. Regarding cumulative development within the watershed, the County Land Use Ordinance requires submittal of a drainage plan on a project specific basis, which minimizes individual projects' effects on drainage and surface water resources. No large projects are currently proposed within the watershed; however, future development in the area would be required to comply with standard requirements. Implementation of project-specific mitigation, and compliance with standard requirements would minimize the potential for significant cumulative drainage impacts.

WAT Impact 7 **Implementation of the proposed project may result in cumulatively significant impacts to existing drainage patterns and flow rates within the Los Berros Creek watershed.**

Implement WAT/mm-9 and WAT/mm-10.

Residual Impact Implementation of the project would contribute to area-wide effects on stormwater runoff rates and downstream flooding. Mitigation is recommended to ensure consistency with existing regulations related to drainage, stormwater runoff, and LID. With implementation of the above measures, the cumulative impact would be considered *less than significant with mitigation, Class II*.

c. Water Quality

Sedimentation and pollutant discharge occurs during both the construction and operational phases of development. The County Land Use Ordinance requires preparation and implementation of an erosion and sedimentation control plan for project requiring a grading permit, and a SWPPP is required for projects resulting in the disturbance of over one acre. Based on the amount of proposed grading, depth of cut and fill slopes, and topography of the project site, the potential water quality impacts would be cumulatively significant. Implementation of erosion and sedimentation control measures and BMPs associated with a SWPPP would minimize potential cumulative impacts to less than significant.

The surrounding area is rural, and wastewater treatment and disposal is generally managed by individual septic systems and leachfields. The proposed community wastewater system is unique to the immediate area, although similar systems are operating in the Nipomo area. All development in the County is regulated by the state and local codes and ordinances, which would also apply to the proposed project. Preparation and implementation of an emergency contingency plan (as previously noted) would further mitigate the potential for accidental discharge and subsequent adverse effects to water quality within Los Berros Creek and downstream surface waters. Based on compliance with existing regulations and implementation of recommended mitigation, potential cumulative impacts would be less than significant.

WAT Impact 8 **Implementation of the proposed project may result in cumulatively significant impacts to water quality, including discharge of sediments and other pollutants during construction and operation of the project.**

Implement WAT/mm-11 through WAT/mm-14 and WW/mm-1.

Residual Impact Implementation of the project would contribute to area-wide effects on water quality. Mitigation is recommended to ensure consistency with existing regulations in place to avoid or minimize erosion and down-gradient sedimentation, and discharge of hydrocarbons, chemicals, and other urban pollutants into surface waters. With implementation of the above measures, this cumulative impact would be considered *less than significant with mitigation, Class II*.

C. BIOLOGICAL RESOURCES

This section describes the biological resources found within the project site. The information presented below is a compilation of botanical, wildlife, and wetland assessment data gathered in the field and from review of information from federal, state, and local resource agencies, and previous biological surveys prepared for portions of the site by other consultants. SWCA biologists conducted field surveys in January and April of 2006; July, August, and September of 2007; and April, June, and July 2008. During the 2007 surveys, SWCA also prepared a *Wetland Assessment* of the project site, which is found in Appendix C. Previous biological surveys and documents reviewed or used in preparation of this section include:

- *Focused Pismo Clarkia Survey Letter of Findings*; David Wolff Environmental, June 17, 2004

- *Laetitia Winery and Vineyard Expansion Project Biological and Wetland Assessment*; Rincon Consultants, Inc., May 4, 2001

SWCA biologists conducted a peer review of the reports, which are available for review at the County Department of Planning and Building.

1. Existing Conditions

The site consists of approximately 1,910 acres of gently to steeply sloping topography, with elevations ranging from approximately 230 feet near Highway 101 to over 1,190 feet in the northeast corner of the project site. Los Berros Creek is located along the southeastern property boundary. A majority of the site is an active vineyard, with undeveloped areas dominated by annual grasslands, coastal scrub, and oak woodland (refer to Figure V.C.-1.1 through 1.3). A total of 13 drainages are located within the property, ten of which are mapped as blue-line features on the United States Geological Survey (USGS) Oceano quadrangle. All of these drainages support annual grassland, freshwater marsh, or riparian habitats. To facilitate discussion in this section, these unnamed channels have been designated alphabetically as Drainages A through M. Drainages A through G, K, and L are direct tributaries to Los Berros Creek. Drainages H, I, J, and M are tributaries to Drainage G.

According to the USGS *Soil Survey of San Luis Obispo County, California Coastal Part* (1984), the mild Mediterranean climate of the area and coastal influence produce summer temperatures averaging 59.9 to 72.4 degrees Fahrenheit (ºF), winter temperatures averaging 41.6 to 60.8 ºF, and annual precipitation averaging 15.6 inches. The USGS Soil Survey maps 17 soil units occurring within the project site. Soil types present include clay, clay loam, sandy clay loam, shaly loam, and rock outcrops (refer to Section V.G., Agricultural Resources, Figure V.G.-1).

a. Plant Communities and Habitat Types

The project site supports the following plant communities and habitat types: agricultural land, annual grassland, coastal scrub, Central Coast cottonwood-sycamore riparian forest, Central Coast riparian scrub, freshwater marsh wetland, coast live oak woodland, and rock outcrop. These communities are interspersed to varying degrees within the project site and provide habitat

for various wildlife species. Wildlife habitat on the project site is discussed in terms of the plant communities present; however, many wildlife species are not restricted to a single community and may utilize various portions of the project site as forage areas or migration corridors on a seasonal or infrequent basis. Typical wildlife expected to utilize the project site include common species adapted to human and agricultural disturbance. The following is a detailed discussion of the plant communities observed in the study area and the wildlife species known to frequent these communities.

1) Agricultural Land

Areas of agricultural land consist primarily of vineyard plantings, but also include approximately 4.9 acres of lemon orchard, and 1.5 acres of lavender, and associated agricultural storage and maintenance areas. Agricultural areas are regularly tilled to control weedy species, and do not provide suitable habitat conditions for most native plant species. The project site contains ruderal (weedy) vegetation along the edges of agricultural areas, as well as along unpaved access roads, reservoirs, drainages, and in other areas of regular disturbance. Dominant species in disturbed agricultural land and associated ruderal areas includes nonnative grasses such as ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), and wild oats (*Avena* spp.), as well as various native species tolerant of disturbance such as California spineflower (*Mucronea californica*), telegraph weed (*Heterotheca grandiflora*), and pincushion plant (*Navarretia* sp.). The agricultural areas offer limited wildlife habitat value other than foraging opportunities when grapes are present.

2) Annual Grassland

Annual grasslands typically include a composition of both non-native and native grasses. Valley and southern coastal grasslands composed of mainly Mediterranean species are common in California and consist of a dense to sparse cover of annual grasses approximately eight to 20 inches high (Holland, 1986; Holland and Keil, 1995). Annual grassland communities are often associated with numerous species of wildflowers, especially in years of favorable rainfall. Germination occurs with the onset of late fall rains; and, growth, flowering, and seed-set occurs from winter through spring. The plants typically die during the summer–fall dry season. Annual grasslands provide foraging habitat for small mammals such as voles (*Microtus* sp.) and white-footed mice (*Peromyscus* spp.). Predators including white-tailed kite (*Elanus leucurus*), American kestrel (*Falco sparverius*), and Cooper's hawk (*Accipiter cooperii*) utilize annual grassland for foraging habitat.

Annual grassland communities are common on the project site along the steeper slopes that have not been converted for agriculture. These areas are dominated by common annual species; however, sparse to dense stands of *Nassella* bunchgrass are sporadically distributed throughout the annual grasslands. These bunchgrass communities are isolated to areas that have not been subject to agricultural impacts, and could support rare annual wildflower species.

NORTH
Scale as Shown

Existing Habitats with Site Plan
FIGURE V.C.-1.1

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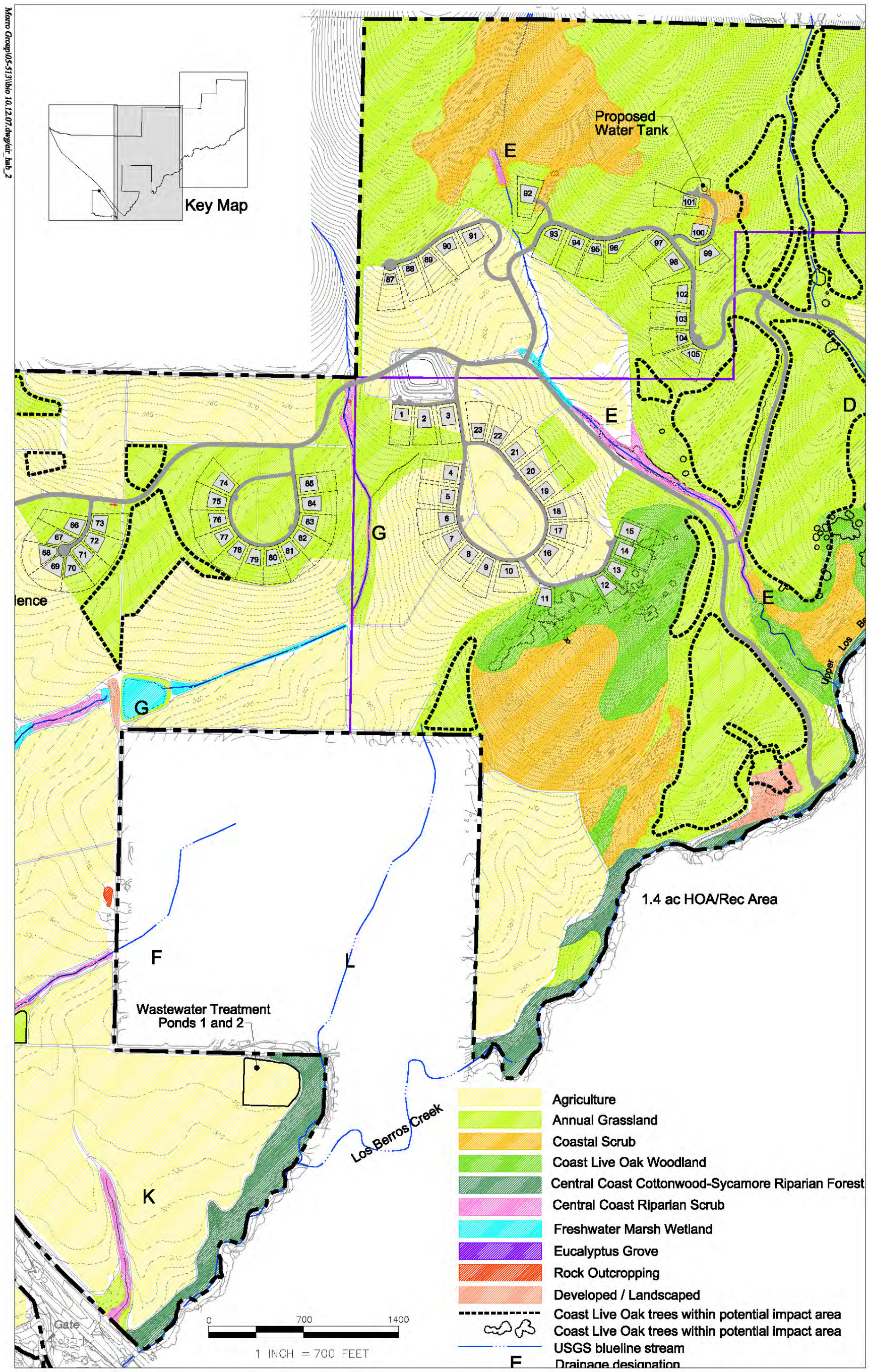

NORTH
Scale as Shown

Existing Habitats with Site Plan
FIGURE V.C.-1.2

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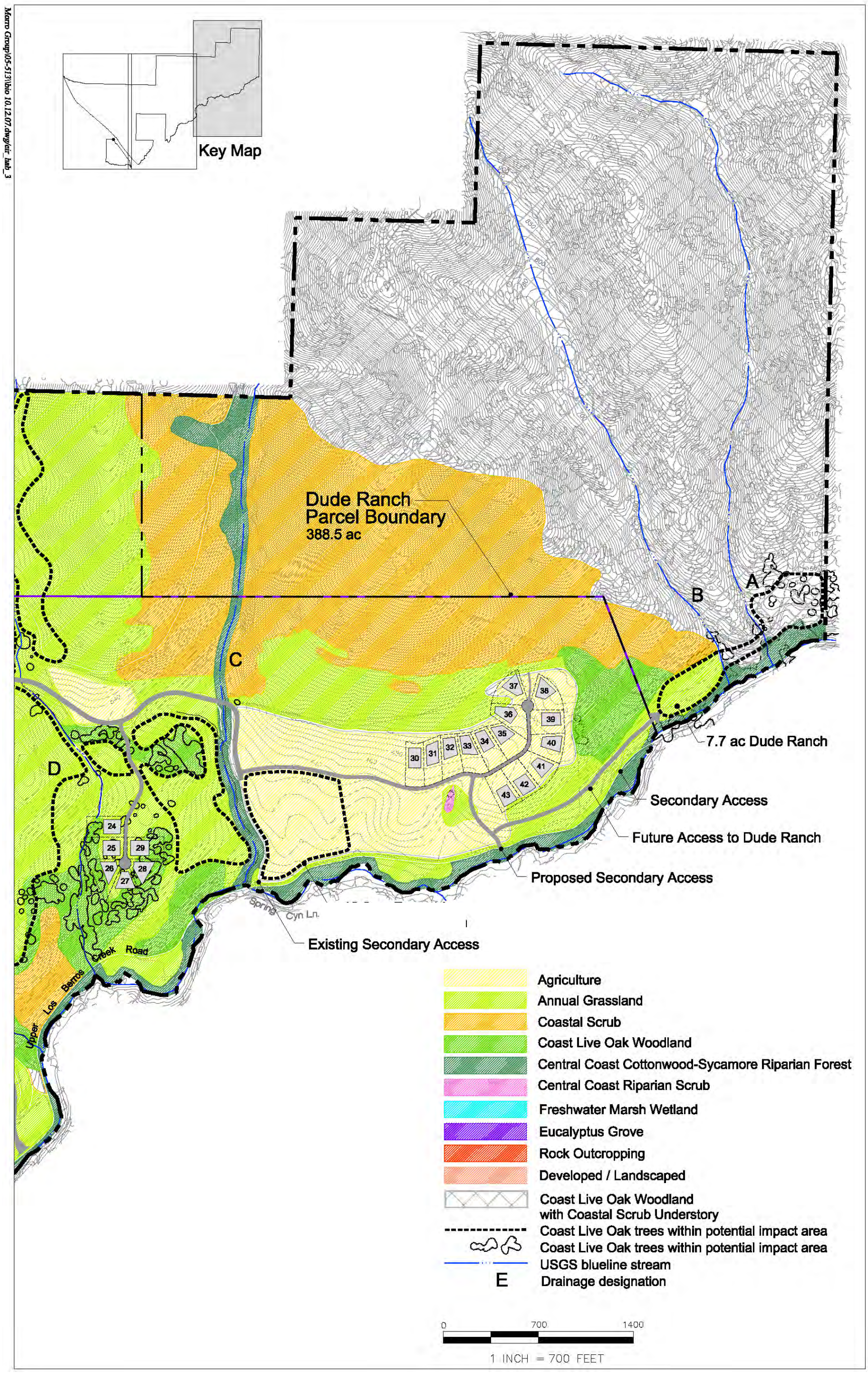

NORTH
Scale as Shown

Existing Habitats with Site Plan
FIGURE V.C.-1.3

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3) Coastal Scrub

Coastal scrub communities are restricted to areas along the coast and extending inland for a few miles. Along the central coast of California, these communities may be sparsely to densely vegetated, and typically lack grassy openings (Holland, 1986). Coastal scrub typically grows on exposed south-facing slopes on a variety of substrates, including sandstone, diatomite, and serpentinite (Holland and Keil, 1995). Characteristic species include coyote brush (*Baccharis pilularis*), California sagebrush (*Artemisia californica*), bush monkeyflower (*Mimulus aurantiacus*), deerweed (*Lotus scoparius*), and sage (*Salvia* spp.). Coastal scrub provides habitat for numerous common wildlife species including brush rabbit (*Sylvilagus bachmanii*), California ground squirrel (*Spermophilus beecheyi*), American crow *(Corvus brachyrhynchos),* California thrasher (*Toxostoma redivivum*), and western fence lizard (*Sceloporus occidentalis*).

Coastal scrub communities are a common component in the northern and eastern portions of the site as oak woodland understory, and in gaps between oak woodland canopy cover; however, most of the coastal scrub on the project site is heavily grazed by managed goat herds. Relatively large areas of intact coastal scrub are located near proposed Lots 11 through 15, and within the future dude ranch area. These areas have not been impacted by agricultural development and have the potential to harbor rare coastal scrub species such as black-flowered figwort.

4) Central Coast Cottonwood-Sycamore Riparian Forest

Central coast cottonwood-sycamore riparian forest includes moderately closed broadleafed riparian forests dominated by western sycamore (*Platanus racemosa*) and Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), with lesser amounts of coast live oak (*Quercus agrifolia*) (Holland 1986). The understory typically consists of dense thickets of shrubby willows (*Salix* spp.), coyote brush (*Baccharis pilularis*), and/or stinging nettle (*Urtica dioica*). These forests occur in floodplains of sub-perennial streams, usually with fairly coarse streambed substrate and seasonally variable depths to the water table. This forest gradually merges with arroyo willow (*Salix lasiolepis*) dominated types at lower elevations or along flatter stream reaches with finer-textured sediment and more constant depth to the water table (Holland, 1986).

Central coast cottonwood-sycamore riparian forest occurs on the project site within Los Berros Creek and Drainage C corridors. These areas are dominated by an open to dense overstory of western sycamore and coast live oaks. Cottonwoods are located within these areas; however, are not providing a dominant cover. The riparian habitat observed in Los Berros Creek and Drainage C (Adobe Canyon Creek) is best described by a combination of central coast cottonwood-sycamore and central coast live oak riparian forests. The riparian forest community provides habitat for resident and migratory bird species. The combination tree and shrub cover provides perching, foraging, and nesting habitat. These areas may also support shading and microclimate control for aquatic species when water is present.

5) Central Coast Riparian Scrub

Central coast riparian scrub consists of scrubby streamside thickets, varying from open to dense and is dominated by any of several willow species (Holland, 1986). The understory commonly supports species such as California blackberry (*Rubus ursinus*) and stinging nettle. Central coast riparian scrub occurs on relatively fine-grained sand and gravel bars that are close to

groundwater, at or near the mouths of most perennial and many intermittent streams of the South Coast Ranges. Riparian scrub communities provide habitat for numerous common and rare bird species including fly-catchers, vireos, wrens, and raptors.

The numerous drainages within the project site support sporadic to continuous stands of central coast riparian scrub. In the study area this community is dominated by arroyo willow (*Salix lasiolepis*) with occasional red willow (*Salix laevigata*) and coast live oak. The shrub layer in these areas is generally poorly developed but sporadic thickets of California blackberry and toyon (*Heteromeles arbutifolia*) are present. The riparian scrub corridors on the project site are surrounded by agricultural development and have an element of weedy species including bristly ox-tongue (*Picris echioides*) and hemlock in the under story.

6) Freshwater Marsh Wetland

Freshwater marsh (coastal and valley fresh water marsh) communities usually occur in nutrient-rich mineral soils that are saturated or inundated on a seasonal or permanent basis. These communities can occur in areas of slow-moving or stagnant shallow water along streams and drainages, or in areas where the low-permeability of soils results in the prolonged presence of surface water or saturated soils. Freshwater marsh is often indicative of waters of the U.S. and/or jurisdictional wetland habitat, both within Army Corps of Engineers (ACOE) jurisdiction. The project site was examined for areas with the potential to support wetland habitat, as defined by ACOE guidelines. This examination led to completion of a formal wetland delineation focusing on drainages within the project site (refer to Appendix C). The delineation identified jurisdictional wetland areas of riverine, lower intermittent streambeds (Cowardin et al., 1979) supporting vegetated streambeds and/or riparian habitat.

Freshwater marsh wetlands within the project site are associated with Los Berros Creek, several of the tributary drainages, and agricultural ponds. The dominant emergent plant species observed in the freshwater marsh areas were California bulrush (*Scirpus californicus*), broad-leaved cattail (*Typha latifolia*), creeping spikerush (*Eleocharis macrostachya*), and rushes (*Juncus* spp). The freshwater marsh wetlands on the site provide foraging and breeding habitat for a variety of wildlife species, including red-winged blackbirds, ducks, song sparrows, and common yellowthroats. In addition, California red-legged frogs, bullfrogs, Pacific tree frogs, and southwestern pond turtle often inhabit freshwater marsh areas.

7) Coast Live Oak Woodland

Coast live oak woodlands feature coast live oak as the dominant evergreen tree, which often reach 30 to 75 feet tall and establish dense canopies (Holland, 1986; Holland and Keil, 1995). The shrub layer is usually poorly developed, but may include species such as toyon (*Heteromeles arbutifolia*), sticky monkeyflower (*Mimulus aurantiacus*), gooseberry (*Ribes* spp.), poison oak (*Toxicodendron diversilobum*), and other shrubs. The herbaceous layer is continuous and dominated by species such as ripgut brome and other introduced grass species. Coast live oak woodlands typically grow on north-facing slopes and shaded ravines, intergrading with coastal scrub and chaparral communities on xeric (dry) sites and coast live oak forest or mixed evergreen forest on mesic (moist) sites (Holland, 1986). Coast live oak woodland and its understory provides habitat for a variety of wildlife species, including foraging habitat for

coyote, red fox (*Vulpes vulpes*), gray fox (*Urocyon cinereoargenteus*), mule deer (*Odocoileus hemionus*), and nesting and foraging habitat for raptors and a variety of perching birds.

On the project site, coast live oak woodlands are concentrated along the Los Berros Creek corridor, the northwestern corner of the property, and the northeastern corner of the property. Remnant occurrences of coast live oak trees are scattered throughout the central portion of the project site but are not dense enough to form woodland. The coast live oak woodlands on the project site support open to moderately dense stands of coast live oaks, interspersed with other disturbed agricultural land, annual grassland, and coastal scrub.

8) Rock Outcrop

Rock outcrops in coastal San Luis Obispo County can consist of a variety of rock and soils complexes. Generally, rock outcrops are portions of bedrock that are exposed on steep to very steep slopes. Due to the steepness and high percentage of rock, rock outcrops are poorly suited for agricultural or engineering purposes. Consequently, these areas tend to be exposed to limited disturbance and can harbor remnant populations of rare plants, and provide shelter habitat for various reptiles, small mammals, and birds.

According to the USGS *Soil Survey*, the rock outcrops on the project site consists of the Lithic Haploxerolls complex, 30 to 75 percent slopes. These rock outcrops consist of sandstone and are associated with sandstone derived soils that can provide habitat for rare plant species including Wells's manzanita (*Arctostaphylos wellsii*) and Indian Knob mountain balm (*Eriodictyon altissimum*).

b. Sensitive Biological Resources

A variety of sensitive habitats, plants, and wildlife species have recently or historically been known to occur within the vicinity of the project site. The ecological importance of the sensitive habitats within or adjacent to the project site are described below. In addition, various special-status species that are known or have potential to occur within or adjacent to the project site are identified in Tables V.C.-1 and V.C.-2.

1) Sensitive Communities

Sensitive communities include wetlands and other habitats listed by the California Department of Fish and Game (CDFG), the County of San Luis Obispo (County), or other resource agencies as meriting protection or further study due to their rarity or value. Of the seven plant communities previously identified as occurring within the project site, only coastal and valley fresh water marsh is considered sensitive by CDFG. However, central coast cottonwood-sycamore riparian forest and riparian scrub habitats are associated with jurisdictional waters of the U.S, and are often regulated by the Clean Water Act of 1972. In addition, the oak woodlands found on-site are protected under Senate Bill 1334 (Kuehl bill). The Kuehl bill mandates mitigation for impacted oak woodland and is administered by the county. Other sensitive habitats known to occur within the investigated USGS quadrangles include central fore dunes, central dune scrub, and central maritime chaparral. These communities are confined to specific coastal locations and are not present within the project site.

(a) Wetlands and Other Waters of the U.S.

Coastal and valley freshwater marsh and the riparian communities described above are often regulated by the ACOE as Waters of the U.S. under Section 404 of the Clean Water Act. Waters of the U.S. include special aquatic sites such as wetlands, and "other waters" that do not qualify as special aquatic sites. Wetlands are defined in the ACOE Wetlands Delineation Manual (Environmental Laboratory, 1987) as:

> "*Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.*"

ACOE-defined wetlands are present if each of the following three criteria is observed: dominance by hydrophytic vegetation; presence of hydric soils; and, evidence of wetland hydrology. ACOE-defined "other waters" are jurisdictional areas that lack one or more of the three wetland criteria. Other waters may include lakes, rivers, streams, mudflats, ephemeral drainages, and sloughs.

The wetland delineation performed on the site found that Los Berros Creek and the tributary drainages contained jurisdictional wetlands and other waters. Generally, the drainages were characteristic of jurisdictional other waters; however, wetlands were identified in sporadic locations within the drainages and irrigation ponds. The wetlands associated with drainages on the project site support low to moderate functions and values characteristic of relatively small watersheds subjected to seasonal inundation.

(b) Coast Live Oak Woodlands

Oak woodland is considered a sensitive habitat in California and is protected by the Kuehl bill. Impacts to oak woodland will require mitigation according to County guidelines. County guidelines encourage project modifications to avoid or reduce impacts to oak woodland. If redesign of the project is not feasible, the County requires mitigation via implementation of an oak tree replacement and conservation program. The oak woodland replacement and conservation program allows an applicant to mitigate 50 percent of the impacts by replanting impacted oak trees. The remaining 50 percent of impacts can be mitigated by developing a conservation easement or contributing a monetary payment into a County-approved conservation program. Coast live oak woodland occurs on the project site in areas proposed for development and impacts to these woodlands would have to be mitigated per the county guidelines.

2) Sensitive Species

As discussed above, the plant communities that exist on the project site provide habitat for plant and animal species. Some of the species that may occupy the site are considered sensitive by regulatory agencies. For the purposes of this EIR, sensitive species are defined as plants and animals that are:

- Species afforded protection under the Federal Endangered Species Act (FESA) and/or California Endangered Species Act (CESA);
- Species proposed for listing under the FESA and/or CESA;
- Species afforded protection under sections of the California Fish and Game Code;
- Birds afforded protection under the Migratory Bird Treaty Act of 1918;
- Species considered either Federal Species of Concern or California Special Concern Species;
- Species that meet the definitions of rare or endangered species under CEQA;
- Plants considered sensitive by the California Native Plant Society (CNPS); and,
- Species considered sensitive by local resource groups/agencies or the scientific community.

(a) Survey Methods and Results

During the literature review portion of this study, SWCA conducted a search of the CDFG California Natural Diversity Data Base (CNDDB). The CNDDB search generated a list of reported occurrences of sensitive plant and animal species within the Oceano and three adjoining USGS topographic quadrangles. The results of the CNDDB search were reviewed to determine reported occurrences of various sensitive species in the general vicinity of the project site. The *Inventory of Rare and Endangered Plants of California* (CNPS, 2007) was reviewed to provide additional information on rare plants that are potentially present in the area. Natural Resource Conservation Service (NRCS) and County soil survey data, and previous SWCA studies of the Arroyo Grande area were also reviewed to determine potential sensitive species presence and habitat suitability within the site.

SWCA biologists conducted biological surveys in January and April of 2006; July, August, and September of 2007; and, April, June, and July 2008. The surveyors walked transects through non-agricultural areas proposed for development, recording all identifiable plant and animal species encountered, and documenting natural communities and habitats present on the project site. Riparian corridors and jurisdictional wetland boundaries were mapped with a Trimble Geo XT GPS data collector capable of sub-meter accuracy. David Wolff Environmental conducted focused Pismo Clarkia surveys on June 1, 2, and 4, 2004. Mr. Wolff surveyed areas that were not previously disturbed by agricultural practices and are proposed for development. Rincon Environmental Consultants conducted botanical surveys on the northwest portion of the property on December 20, 21, and 22, 2000; and, January 19, April 4, and June 8, 2001. The Rincon surveys covered the approximate locations of proposed Lots 46 through 85 and the associated roads; however, the survey did not cover the eastern portion of the property. The surveys conducted by SWCA, Mr. Wolff, and Rincon were timed to coincide with the appropriate blooming periods of special-status plant species that have suitable habitat within the proposed project site and were sufficient to establish the presence/absence of special-status plant species.

The CNDDB and CNPS reviews identified occurrence records for 53 plant and wildlife taxa that are considered sensitive by federal, state, or local agencies within the four USGS quadrangles. The name and legal status of each of these species are identified in Tables V.C.-1 and V.C.-2, as well as a general description of the habitat requirements for each species. The “potential for occurrence” column in the tables identifies presence or absence of suitable habitat for each

species within the site, and provides field survey results for each species. Of the 53 sensitive plant and animal species identified as occurring within the quadrangles, 14 plants and 11 animals were identified as potentially present due to the presence of suitable habitat on the site.

(b) Sensitive Plants

A total of 34 sensitive plant species were identified for consideration during the literature search; however, only 14 sensitive plant species were determined to have suitable habitat conditions within areas of the proposed project (refer to Table V.C.-1). These 14 species are described in greater detail in Appendix C, Sensitive Species Descriptions, and include:

- Santa Margarita manzanita
- Wells' manzanita
- Marsh sandwort
- Miles's milk-vetch
- Cambria morning-glory
- Obispo indian paintbrush
- Straight-awned spineflower
- California saw grass
- Dune larkspur
- Indian Knob mountainbalm
- San Luis Obispo County lupine
- Carmel Valley bush mallow
- Black-flowered figwort
- San Bernardino aster

The remaining 20 plant species were eliminated from consideration based on lack of suitable plant communities and/or soils on-site, and previous negative survey results reported by Rincon Consultants (Rincon, 2001) and David Wolff Environmental (DWE, 2004). No sensitive plant species were observed during these previous survey efforts. Survey efforts performed by SWCA for this EIR occurred within the normal blooming period for the sensitive plant species that may occur on the property. None of the above mentioned special-status plant species were observed during the surveys; however, Jones' mallow and club-haired mariposa lily were observed within the proposed project footprint. Both these species are included on the CNPS list 4.3, which is a "watch list" that indicates that these species have a limited distribution and are "not very rare in California." Generally, species included on List 4 do not meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the CDFG Code (CNPS, 2008). However, CNPS recommends special considerations for List 4 species if the individuals are located near the periphery of the species range, in areas where the species is uncommon, or the species has sustained heavy losses in its locality. As proposed, development of the project would result in the removal of approximately 75 percent of the Jones' mallow found on-site; consequently, this EIR provides mitigation measures to address impacts to this species.

c. Sensitive Wildlife

A total of 19 sensitive wildlife species were identified during the literature search as potentially present in the vicinity of the project site (refer to Table V.C.-2). Of these species, nine were eliminated from consideration based on lack of suitable habitat conditions on or adjacent to the site. The remaining ten sensitive wildlife species determined to have suitable habitat conditions within areas of the proposed project are discussed in Appendix C, Sensitive Species Descriptions, and include:

- Cooper's hawk
- Sharp-shinned hawk
- western yellow-billed cuckoo
- Willow flycatcher
- White-tailed kite
- South-central California coast steelhead
- southwestern pond turtle
- two-striped garter snake
- California red-legged frog
- Coast Range newt

Of these ten species Cooper's hawk, White-tailed kite, and California red-legged frog were observed on the property during the surveys. In addition, an individual pond turtle from the *Emydidae* family was observed basking on an irrigation line in an existing agricultural pond that is located between proposed Lots 1 through 3 and proposed Main Road 1. This individual took cover before the biologist could determine its specific epithet; however, it is likely that the individual was a southwestern pond turtle.

d. Critical Habitat Designations

Both South-central California coast steelhead and California red-legged frog have critical habitat designations within San Luis Obispo County. Los Berros Creek at the southern boundary of the project site supports suitable habitat and the primary constituent elements for steelhead. According to the Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California; Final Rule January 2, 2006, National Marine Fisheries Service (NOAA Fisheries) has designated Los Berros Creek as steelhead Critical Habitat in the Estero Bay Hydrologic Sub-unit 3310 and the Oceano Hydrologic Sub Area 331031. Based on the Revised Designation of Critical Habitat for the California red-legged frog Final Rule Dated March 17, 2010, USFWS has designated four California red-legged frog Critical Habitat Units in San Luis Obispo County. The proposed project site is not located in any of the four San Luis Obispo County Critical Habitat Units.

Steelhead was not observed during the biological surveys; however, in recent communications with Anthony Spina of NOAA Fisheries, Mr. Spina indicated that steelhead is present within the upper reaches of Los Berros Creek. Rincon conducted protocol surveys on the project site for California red-legged frog in October and November of 2000. The Rincon surveys identified nine California red-legged frogs centrally located in the property. These individuals were observed in areas proposed for improvements.

TABLE V.C.-1
Sensitive Plant Species Potentially Occurring Within the Project Site

Species Name	Habitat Requirements	Flowering Season	Status	Habitat Present or Absent	Rationale
Agrostis hooveri Hoover's bent grass	Stoloniferous herb. Occurs in chaparral, cismontane woodland; and valley and foothill grassland with sandy soils. Elevation 60-600 meters.	April - July	Fed: -- Calif: S2.2 CNPS: List 1B.2	A	Nearest occurrence 1.6 miles northwest of the property. No sandy soils on project site. Species not observed during surveys.
Arctostaphylos luciana Santa Lucia manzanita	Shrub. Occurs in chaparral and cismontane woodland on shale soils. Elevation 350-850 meters.	February - March	Fed: -- Calif: S2.2 CNPS: List 1B.2	A	Nearest occurrence 10.5 miles northwest of the property. Site elevation is too low. Species not observed during surveys.
Arctostaphylos pilosula Santa Margarita manzanita	Shrub. Occurs in closed coniferous forest, chaparral, and cismontane woodland on shale soils. Elevation170-1100 meters	December - March	Fed: -- Calif: S2.2 CNPS: List 1B.2	P	Nearest occurrence 8.1 miles northeast of the property. Suitable habitat in oak woodland. Species not observed during surveys.
Arctostaphylos rudis Sand mesa manzanita	Shrub. Occurs in chaparral and coastal scrub (sandy) in Lompoc and Nipomo area. Elevation 25-230 meters.	November - February	Fed: -- Calif: S2.2 CNPS: List 1B.2	A	Nearest occurrence 0.3 mile south of the property on the Nipomo Mesa south of Los Berros Creek. No sandy soils within the project area. Species not observed during surveys.
Arctostaphylos wellsii Wells's manzanita	Shrub. Occurs in closed-cone coniferous forest, chaparral (sandstone soils). Elevation 30-400 meters.	December - April	Fed: -- Calif: S1S2 CNPS: List 1B.1	P	Nearest occurrence immediately adjacent to the southeastern side of the property near Los Berros Canyon. Suitable habitat is present in vicinity of proposed dude ranch. Species not observed during surveys.
Arenaria paludicola Marsh sandwort	Perennial herb. Occurs in bogs and fens, marshes and swamps (freshwater). Elevation 3-170 meters.	March - August	Fed: FE Calif: S1, CE CNPS: List 1B.1	P	Nearest occurrence 2.3 miles southeast of the property within Black Lake Canyon. Suitable habitat occurs within Los Berros Creek and Drainages. Species not observed during surveys.
Astragalus didymocarpus var. *milesianus* Miles' milk-vetch	Annual herb. Occurs in coastal scrub (clay). Elevation 20-90 meters.	March - June	Fed: -- Calif: S2.2 CNPS: List 1B.2	P	Nearest occurrence 8.8 miles east of the property. Suitable habitat is present in areas of minimal agricultural impacts. Species not observed during surveys.

Species Name	Habitat Requirements	Flowering Season	Status	Habitat Present or Absent	Rationale
Calochortus obispoensis San Luis mariposa lily	Perennial herb. Occurs in chaparral, coastal scrub, valley and foothill grassland, often serpentinite. Elevation 75 -730 meters.	May - July	Fed: -- Calif: S2.1 CNPS: List 1B.2	A	Nearest occurrence 4.4 miles northwest of the property. No serpentine present on the site. Species not observed during surveys.
Calystegia subacaulis ssp. *episcopalis* Cambria morningglory	Rhizomatous herb. Occurs in chaparral and cismontane woodland. Elevation 60-500 meters.	April - June	Fed: -- Calif: S3 CNPS: List 4.2	P	Nearest occurrence 11.4 miles north of the property. Suitable habitat is present in oak woodlands. Species not observed during surveys.
Castilleja densiflora ssp. *obispoensis* Obispo Indian paintbrush	Annual herb. Occurs in valley and foothill grassland. Elevation 10-400 meters.	March - May	Fed: -- Calif:S2.2 CNPS: List 1B.2	P	Nearest occurrence 3.4 miles northwest of the property. Suitable habitat is present in areas of minimal agricultural impacts. Species not observed during surveys.
Chorizanthe breweri Brewer's spineflower	Annual herb. Occurs in closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub (serpentinite). Elevation 45-800 meters.	April - August	Fed: -- Calif:S2.2 CNPS: List 1B.3	A	Nearest occurrence 8.1 miles northwest of the property. No serpentine soils on project site. Species not observed during surveys.
Chorizanthe rectispina Straight-awned spineflower	Annual herb. Occurs in chaparral, cismontane woodland and coastal scrub. Elevation 85-1035 meters.	April - July	Fed: -- Calif: S1.2 CNPS: List 1B.3	P	Nearest occurrence 4.0 miles northwest of the property. Suitable habitat is present in oak woodland and coastal scrub. Species not observed during surveys.
Cirsium loncholepis La Graciosa thistle	Perennial herb. Occurs in coastal dunes, coastal scrub, marshes, and swamps (brackish, mesic). Elevation 4-220 meters.	May – August	Fed: FE Calif: S1 CNPS: List 1B.1	A	Nearest occurrence 4.3 miles west of the property. No brackish wetlands or dune complex on property. Species not observed during surveys.
Cirsium rhothophilum Surf thistle	Perennial herb. Occurs in coastal bluff scrub and coastal dunes. Elevation 3-60 meters.	April – June	Fed: -- Calif: S2.2 CNPS: List 1B.2	A	Nearest occurrence 4.4 miles northwest of the property. Site elevation is too high; no coastal dunes. Species not observed during surveys.
Cladium californicum California sawgrass	Rhizomatous herb. Occurs in meadows and seeps, and marshes and swamps (alkaline or freshwater). Elevation 60-600 meters.	June - September	Fed: -- Calif: S2.2 CNPS: List 2.2	P	One known population occurs in USGS quadrangle for Oceano (CNPS 2007). Suitable habitat is present in wetland areas of minimal agricultural impacts. Species not observed during surveys.

Species Name	Habitat Requirements	Flowering Season	Status	Habitat Present or Absent	Rationale
Clarkia speciosa ssp. *immaculata* Pismo clarkia	Annual herb. Occurs in chaparral, cismontane woodland, and coastal scrub. Elevation 25-185 meters.	May – July	Fed: FE Calif: S1.1 CNPS: List 1B.1	A	Nearest occurrence 1.68 miles south of the project site north of Black Lake Golf Course. Soils are not suitable for this species. Species not observed during focused surveys (D. Wolfe, 2004).
Deinandra increscens ssp. *foliosa* Leafy tarplant	Annual herb. Occurs in valley and foothill grasslands. Elevation 300 – 500 meters.	June - September	Fed: -- Calif:S2.2 CNPS: List 1B.2	A	Nearest occurrence 4.38 miles to the northeast of the property. No suitable habitat; site elevation is too low. Species not observed during surveys.
Delphinium parryi ssp. *blochmaniae* Dune larkspur	Perennial herb. Occurs in chaparral (maritime) and coastal dunes (sandy and rocky soils). Elevation 0-200 meters.	April – May	Fed: -- Calif:S2.2 CNPS: List 1B.2	P	Nearest occurrence located adjacent to the southern portion of the property between State Route 101 and Los Berros Creek. Rocky soils provide suitable habitat on the project site. Species not observed during surveys.
Delphinium umbraculorum Umbrella larkspur	Perennial herb. Occurs in cismontane woodland. Elevation 400 – 1600 meters.	April - June	Fed: -- Calif:S2S3.3 CNPS: List 1B.3	A	Nearest occurrence 4.8 miles north of the property at Lopez Lake. No suitable habitat; site elevation is too high. Species not observed during surveys.
Dithyrea maritima Beach spectaclepod	Rhizomatous herb. Occurs in coastal dunes and coastal scrub (sandy). Elevation 3-50 meters.	March - May	Fed: -- Calif: S2.1 CNPS: List 1B.1	A	Nearest occurrence 4.4 miles northwest of the property. Elevation of project site is too low. Species not observed during surveys.
Dudleya abramsii ssp. *murina* San Luis Obispo dudleya	Perennial herb. Occurs in chaparral, cismontane woodland, valley and foothill grassland (serpentinite). Elevation 90-440 meters.	May - June	Fed: -- Calif: S2.3 CNPS: List 1B.3	A	Nearest occurrence 18.5 miles northwest of the property at Linsey Ranch. No serpentine soils on the project site. Species not observed during surveys.
Erigeron blochmaniae Blochman's leafy daisy	Perennial rhizomatous herb. Occurs in coastal dunes and coastal scrub (sandy). Elevation 3-45 meters.	July – August	Fed: -- Calif: S2.2 CNPS: List 1B.2	A	Nearest occurrence 1.8 miles west of the property on the Nipomo Mesa. Site elevation is too high; no sandy soils. Species not observed during surveys.

Species Name	Habitat Requirements	Flowering Season	Status	Habitat Present or Absent	Rationale
Eriodictyon altissimum Indian Knob mountainbalm	Evergreen shrub. Occurs in chaparral (maritime), cismontane woodland and coastal scrub (sandstone). Elevation 80-270 meters	March - June	Fed: FE Calif: S2.2 CNPS: List 1B.1	P	Nearest occurrence 10.4 miles northwest of the property at Indian Knob. Suitable habitat is present in oak woodlands with minimal agricultural impacts. Species not observed during surveys.
Fritillaria ojaiensis Ojai fritillary	Bulbiferous herb. Occurs in broadleafed upland forest (mesic), chaparral and lower montane coniferous forest (rocky). Elevation 300-998 meters.	March - May	Fed: -- Calif: S2 CNPS: List 1B.2	A	Nearest occurrence 8.3 miles northeast of the property. No suitable habitat; site elevation is too low. Species not observed during surveys.
Horkelia cuneata ssp. *puberula* Mesa horkelia	Perennial herb. Occurs in chaparral, cismontane woodland and coastal scrub (sandy soils). Elevation 70-810 meters.	February - September	Fed: -- Calif:S2.1 CNPS: List 1B.1	A	Nearest occurrence 7.2 miles northwest of the property. No sandy soils on project site. Species not observed during surveys.
Horkelia cuneata ssp. *sericea* Kellogg's horkelia	Perennial herb. Occurs in closed-cone coniferous forest, chaparral (maritime), and coastal scrub (sandy or gravelly openings). Elevation 10-200 meters.	April - September	Fed: -- Calif: S1.1 CNPS: List 1B.1	A	Nearest occurrence 1.7 miles south of the project site. No sandy soils on project site. Species not observed during surveys.
Lupinus ludovicianus San Luis Obispo County lupine	Perennial herb. Occurs in chaparral (margins and openings), cismontane woodland; and valley and foothill grassland (sandy and sandstone soils). Elevation 25-185 meters.	April - July	Fed: -- Calif: S2.2 CNPS: List 1B.2	P	Nearest occurrence 4.2 miles east of the property adjacent to Huasna Road. Suitable habitat is present in areas of minimal agricultural impacts. Species not observed during surveys.
Lupinus nipomensis Nipomo Mesa lupine	Annual herb. Occurs in coastal dunes. Elevation 10-50 meters.	December – May	Fed: -- Calif: S1.1 CNPS: List 1B.1	A	Nearest occurrence 3.5 miles southeast of the property. No coastal dunes on the project site. Species not observed during surveys.
Malacothamnus palmeri var. involucratus Carmel Valley bush mallow	Deciduous shrub. Occurs in chaparral, cismontane woodland and coastal scrub. Elevation 30-1100 meters.	May - August	Fed: -- Calif: S2.2 CNPS: List 1B.2	P	Populations known to occur in San Luis Obispo USGS quadrangle (CNPS 2007). Coastal scrub and oak woodlands provide suitable habitat. Species not observed during surveys.
Monardella crispa Crisp monardella	Rhizomatous herb. Coastal dunes and coastal scrub (sandy). Elevation 10-120 meters.	April – August	Fed: -- Calif: S2.2 CNPS: List 1B.2	A	Nearest occurrence 3.3 miles southwest of the property. No sandy soils on the project site. Species not observed during surveys.

Species Name	Habitat Requirements	Flowering Season	Status	Habitat Present or Absent	Rationale
Monardella frutescens San Luis Obispo monardella	Rhizomatous herb. Occurs in coastal dunes and coastal scrub (sandy). Elevation 10-200 meters.	May - September	Fed: -- Calif:S2.2 CNPS: List 1B.2	A	Nearest occurrence 3.3 miles southwest of the property. No sandy soils or coastal dunes on the project site. Species not observed during surveys.
Rorippa gambelii Gambel's water cress	Rhizomatous herb. Occurs in marshes and swamps (freshwater or brackish). Elevation 3-50 meters.	April - September	Fed: FE Calif: S1 CNPS: List 1B.1	A	Nearest occurrence approximately 2.8 miles southwest of the property located in Black Lake Canyon. Site elevation is too high. Species not observed during surveys.
Scrophularia atrata Black-flowered figwort	Perennial herb. Occurs in closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub, and riparian scrub. Elevation 10-500 meters.	March - July	Fed: -- Calif: S2.2 CNPS: List 1B.2	P	Nearest occurrence 6.1 miles northwest of the property. Suitable habitat is present in coastal and riparian scrub areas. Species not observed during surveys.
Symphyotrichum defoliatum San Bernardino aster	Rhizomatous herb. Occurs in cismontane woodland, coastal scrub, and foothill grassland near ditches and springs. Elevation 2-2,040 meters.	July - November	Fed: -- Calif: S2 CNPS: List 1B.2	P	Nearest occurrence 2.7 miles west of the property at the base of the Halcyon Road grade. Oak woodland and coastal scrub on site provides suitable habitat. Species not observed during surveys.

Status Codes
--= No status

Federal:
FE = Federally Endangered
FT = Federally Threatened

State:
R = Rare
ST = State Threatened
SE = State Endangered
SR = State Rare

California Native Plant Society (CNPS):
List 1B = rare, threatened, or endangered in California and elsewhere.
List 2 = rare, threatened, or endangered in California, but more common elsewhere.
List 3 = plants that about which more information is needed.

Threat Code:
.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = Fairly endangered in California (20-80% occurrences threatened)
.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)

General references: Calflora, 2005; CNDDB, 2007; CNPS, 2007; CDFG, 2004; Tibor, 2001; Hickman, 1993; Munz, 1974.

TABLE V.C.-2
Sensitive Wildlife Species Potentially Occurring within the Project Site

Species Name	Status	Habitat Requirements	Habitat Present or Absent	Rationale
Birds				
Accipiter cooperii *Cooper's hawk*	CSC	Deciduous riparian woodland habitat throughout California	P	No CNDDB documented occurrences. Los Berros Creek riparian corridor provides suitable habitat. Species observed hunting over annual grassland during biological surveys.
Accipiter striatus Sharp-shinned hawk	MBTA, CSC,	(Nesting) ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats; prefers riparian areas, north-facing slopes, with plucking perches; nests usually within 275 feet of open water.	P	Nearest occurrence 3.4 miles southwest of the property on the Woodlands Development. Marginal foraging habitat may occur in oak woodlands within the project site; nesting habitat is unlikely due to the lack of a nearby water source. Species not observed during surveys.
Charadrius alexandrinus nivosus Western snowy plover	MBTA, FT, CSC,	Occurs on sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	A	Nearest occurrence 4.0 miles to the west of the property and associated with the dune complex. No suitable nesting or foraging habitat occurs within the project site. Species not observed during surveys.
Class Aves Other migratory bird species (nesting)	MBTA	Annual grasslands, coastal scrub, and oak woodlands may provide nesting habitat.	P	Potential nesting habitat occurs throughout the project site. Several inactive nests observed during surveys.
Coccyzus americanus occidentalis Western yellow-billed cuckoo	SE, MBTA, FC, CE	Occurs in forests and open riparian woodlands with thick understory. Nests in riparian areas with thick understory of blackberry, nettles, and/or wild grape.	P	Nearest occurrence 14.3 miles northwest of the property in San Luis Obispo. Suitable nesting and foraging habitat occurs within the Los Berros Creek riparian corridor. Species not observed during surveys.

Species Name	Status	Habitat Requirements	Habitat Present or Absent	Rationale
Elanus leucurus White-tailed kite	MBTA, CSC, FP	(Nesting) Rolling foothills/valley margins with oaks and river bottoms or marshes next to deciduous woodlands; forages in grasslands, meadows, or marshes close to isolated, dense-topped trees for nesting and perching.	P	CNDDB documents the nearest occurrence near Chorro Creek in San Luis Obispo; however, SWCAbiologists have observed this species adjacent to the project site. Suitable foraging and nesting habitat occurs throughout the project site. Species not observed during the surveys.
Falco mexicanus Prairie falcon	MBTA, CSC	Occurs primarily in perennial grasslands, savannahs, and rangelands. Nests on sheltered ledges of cliffs. Not in coastal fog belt or coastline.	A	Occurrence information for this species is unknown. Site maybe too close to coastal fog belt. No suitable nesting habitat. Species not observed during surveys.
Gymnogyps californianus California condor	FE, SE	Occurs in open savannahs, grasslands, and foothill chaparral, in mountain ranges with moderate altitudes. Nest in deep canyons on rock walls with clefts.	A	Nearest occurrence 18.2 miles northeast of the property at the Hi Mountain Condor Area. Marginal foraging habitat occurs on the site. No suitable nesting habitat occurs on the site. Species not observed during surveys.
Sternula antillarum browni California least tern	FE, SE	Occurs on the coast from San Francisco south to northern Baja California. Nests on sand beaches, sparsely vegetated areas, flat substrates, alkaline flats, landfills, and paved areas.	A	Nearest occurrence approximately 6.59 miles southwest of the property at Oso Flaco Lake. No suitable foraging or nesting habitat occurs on the site. Species not observed during surveys.
Fishes				
Eucyclogobius newberryi Tidewater goby	FE, CSC	Occurs in brackish shallow lagoons and lower stream reaches where water is fairly still, but not stagnant.	A	Nearest occurrence 5.5 miles west of the property at the Arroyo Grande Creek Lagoon. No suitable aquatic habitat occurs within the project site. Species not observed during surveys.
Oncorhynchus mykiss irideus South-central California coast steelhead	FT, CSC	Occurs in optimally, clear, cool water with abundant in-stream cover, well-vegetated stream margins, relatively stable water flow, and a 1:1 pool-to-riffle ratio.	CH	Nearest occurrence 2.0 miles northwest of the property within Arroyo Grande Creek. Los Berros Creek is designated Steelhead Critical Habitat. Species not observed during surveys.

Species Name	Status	Habitat Requirements	Habitat Present or Absent	Rationale
Insects				
Danaus plexippus Monarch butterfly	SA	Occurs in coastal eucalyptus and Monterey cypress stands.	A	Nearest occurrence approximately 2.00 miles south of the property on the Nipomo Mesa. No suitable eucalyptus or cypress roosting habitat occurs within the project site. Species not observed during surveys.
Mammals				
Taxidea taxus American badger	CSC	Prefer friable soils, and relatively open, uncultivated ground, grasslands, savannas, and mountain meadows near timberline.	A	Nearest occurrence 3.6 miles northwest of the property. Unlikely due to widespread agricultural disturbance and rocky soils. Species not observed during surveys.
Reptiles				
Actinemys marmorata pallida Southwestern pond turtle	CSC	Occurs in quiet waters of ponds, lakes, streams, and marshes. Typically in the deepest parts with an abundance of basking sites.	P	Nearest occurrence 3.6 miles northwest of the property. Suitable habitat occurs in the various agricultural ponds. One individual observed in existing agricultural pond on-site.
Phrynosoma coronatum frontale Coast horned lizard	CSC	Found in a variety of habitats, and common in lowlands along sandy washes with scattered low bushes. Requires open areas, shrubs, and loose soil.	A	Nearest occurrence 2.6 miles north of the property. Drainages on-site lack sandy soils and adjacent washes with shrubs. Species not observed during surveys.
Thamnophis hammondii two-striped garter snake	CSC	Inhabits perennial and intermittent streams with rocky beds bordered by dense vegetation. May also utilizes stock ponds and other artificially-created aquatic habitats	P	CNDDB does not document an occurrence within the USGS quadrangles; however, SWCA biologists have observed this species in Arroyo Grande Creek approximately 4.0 miles northeast of the property.

Species Name	Status	Habitat Requirements	Habitat Present or Absent	Rationale
Amphibians				
Ambystoma californiense California tiger salamander	FT, CSC	Frequents grassland, oak savanna, and edges of mixed woodland and lower elevation coniferous forest.	A	Nearest occurrence 4.8 miles north of the property at Lopez Lake. Unlikely due to the lack of uncultivated grasslands with temporary rain pools. Oak woodlands on-site are steep and rocky and do not have pools. Species not observed during surveys.
Rana aurora draytonii California red-legged frog	FT, CSC	Found in lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation. Requires 11-20 weeks permanent water for larval development and needs access to aestivation habitat.	P	One occurrence located on the property near the Highway 1 entrance. Six other occurrences located within 0.61-mile around the property. On-site ponds and wet drainages provide habitat. Species observed by Rincon biologists during 2000 surveys.
Spea hammondii Western spadefoot	CSC	Occurs in grassland habitats primarily, but also in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and for laying eggs.	A	Nearest occurrence 6.6 miles south of the property. Grassland habitat is present; however no vernal pools for breeding have been identified on the project site. Species not observed during surveys.
Taricha torosa torosa Coast Range newt	CSC	Coastal drainages from Mendocino County to San Diego County. Resides in terrestrial habitats and migrates up to 1 Km to breed in slow moving streams, ponds, and reservoirs.	P	Nearest occurrence approximately 6.9 miles northeast. Suitable habitat occurs on the project site for this species. Species not observed during surveys.

Status Codes

Federal:
FE = Federally Endangered
FT = Federally Threatened
FC = Federal Candidate
MBTA = Federally Migratory Bird Treaty Act

State:
SE = California Endangered
ST = California Threatened
CSC = California Species of Special Concern
FP = Fully Protected
SA = CNDDB Special Animal

Habitat – Presence/Absence:
A: Absent – means no further work is needed.
P: Present – means general habitat is present and species could be present.
CH: Critical Habitat – means that the project study area is located within a designated critical habitat unit, but does not mean that appropriate habitat is present.

General references: CNDDB, 2007; Zeiner et al., 1988; SWCA *files.*

2. Regulatory Setting

a. Federal Policies and Regulations

1) Section 404 of the Clean Water Act of 1977

Regulatory protection for water resources throughout the U.S. is under the jurisdiction of the ACOE. Section 404 of the Clean Water Act prohibits the discharge of dredged or fill material into Waters of the U.S. without formal consent from the ACOE. Waters of the U.S. includes Special Aquatic Sites (e.g., marine waters, tidal areas, stream channels, and wetlands). Impacts to biological resources are assessed as part of the 404 permitting process through consultation with the USFWS. Policies relating to the loss of aquatic habitats generally stress the need to compensate losses on at least an acre-for-acre (1:1) basis. Under Section 404, actions in Waters of the U.S. may be subject to either an individual permit or a general permit, or may be exempt from regulatory requirements. Some activities have been given blanket authorization under the provisions of a general permit through the Nationwide Permit system.

Project activities proposed within or adjacent to drainages on the project site fall under the jurisdiction of the ACOE and any impacts to jurisdictional areas would be regulated under Section 404 provisions.

2) Section 401 of the Clean Water Act of 1977

Section 401 of the Clean Water Act and its provisions ensure that federally permitted activities comply with the federal Clean Water Act and state water quality laws. Section 401 is implemented through a review process that is conducted by the Regional Water Quality Control Board (RWQCB), and is triggered by the Section 404 permitting process. The RWQCB certifies via the 401 process that a proposed project complies with applicable effluent limitations, water quality standards, and other conditions of California law. Evaluating the effects of the proposed project on both water quality and quantity falls under the jurisdiction of the RWQCB. Proposed project activities that have the potential to result in impacts to water quality and quantity would require certification by the RWQCB.

3) Federal Endangered Species Act of 1973

The FESA provides legislation to protect federally listed plant and animal species. Impacts to listed species resulting from the implementation of a project would require the responsible agency or individual to formally consult with the USFWS or NOAA Fisheries to determine the extent of impact to a particular species. If USFWS or NOAA Fisheries determine that impacts to a species would likely occur, alternatives and measures to avoid or reduce impacts must be identified. USFWS and NOAA Fisheries also regulate activities conducted in federal critical habitat, which are geographic units designated as areas that support primary habitat constituent elements for listed species.

The following five federally endangered or threatened species were determined to have suitable habitat conditions on the project site: marsh sandwort, Indian Knob mountainbalm, western yellow-billed cuckoo, South-central California coast steelhead, and California red-legged frog. In addition, the project site is located directly adjacent to Los Berros Creek, which is designated federal critical habitat for South-central California coast steelhead. Project related activities

would require coordination with USFWS and NOAA Fisheries to determine the potential for take of species that are protected under the FESA.

4) Migratory Bird Treaty Act of 1918

The federal Migratory Bird Treaty Act (MBTA) protects all migratory birds, including their eggs, nests, and feathers. The MBTA was originally drafted to end the commercial trade in bird feathers popular in the latter part of the 1800's. This act is enforced by the USFWS, and potential impacts to species protected under this law are evaluated by the USFWS in consultation with the ACOE during 404 review. The MBTA protects the Cooper's hawk, white-tailed kite, and other nesting bird species that have the potential to occur on the project site.

b. State Policies and Regulations

1) California Endangered Species Act

The CESA ensures legal protection for plants listed as rare or endangered, and species of wildlife formally listed as endangered or threatened. The state law also lists California Special Concern species based on limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. Under state law, the CDFG is empowered to review projects for their potential to impact state-listed species and California Special Concern species, and their habitats.

The project site and directly adjacent areas were determined to support suitable habitat for the following state endangered or threatened species: Cooper's hawk, sharp-shinned hawk, white-tailed kite, south-central California coast steelhead, southwestern pond turtle, two-striped garter snake, California red-legged frog, and Coast Range newt. Pursuant to CESA, project activities must be reviewed by the CDFG to determine the potential for impacts to these species.

2) Section 1602 of the Fish and Game Code

The CDFG is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. To meet this responsibility, the law requires any person, state or local government agency, or public utility proposing a project that may impact a river, stream, or lake to notify the CDFG before beginning the project. If the CDFG determines that the proposed project may adversely affect existing fish and wildlife resources, a Lake or Streambed Alteration Agreement is required. A Streambed Alteration Agreement lists the CDFG conditions of approval relative to the proposed project, and serves as an agreement between an applicant and the CDFG for a term of not more than five years for the performance of activities subject to this section. A Streambed Alteration Agreement from the CDFG would be required prior to any direct or indirect impact to streambeds, banks, channels or associated riparian resources.

3) Other Sections of the Fish and Game Code

"Fully Protected" species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFG. Information on these species can be found within Section 3511 (birds), Section 4700 (mammals), Section 5050 (reptiles and amphibians), and Section 5515 (fish) of the Fish and Game Code. The white-tailed kite is a Fully Protected species that was observed foraging over the project site.

4) Senate Bill 1334 Oak Woodlands Conservation

Under SB 1334 county governments are responsible for conserving oak woodlands within their jurisdiction. During the CEQA review process, SB 1334 requires County governments to determine if a proposed project would result in the conversion of oak woodland. If the County determines that the proposed project would result in the conversion of oak woodland, the County is mandated to require implementation of specified mitigation as outlined in an oak woodland management plan. In San Luis Obispo County, oak woodlands are defined as areas containing greater than ten percent oak canopy cover. The County of San Luis Obispo oak management plan defines conversion as cutting or removing ten percent or more of the oak woodland canopy or removing more than ten oak trees. The proposed project would result in the conversion of oak woodland; therefore, is subject to mitigation as mandated by SB1334 and the County oak management plan.

3. Thresholds of Significance

The significance of potential biological impacts are based on thresholds identified within Appendix G of the CEQA Guidelines and the County CEQA Checklist, which provides the following thresholds for determining impact significance with respect to biological resources. Biological impacts would be considered significant if the proposed project would:

- Substantially affect a rare or endangered species;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act;
- Interfere substantially with the movement of any resident or migratory species of wildlife or with established native resident or migratory wildlife corridors;
- Conflict with any local policies or ordinances protecting biological resources;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan;
- Reduce the long term viability of native plant, fish, or wildlife populations;
- Reduce species diversity or numbers of species; and,
- Introduce invasive plant or animal species.

4. Impact Assessment and Methodology

Impact assessment focused on identifying potential project-related impacts associated with implementation of the project, and was based on details presented within the project description. Identified impacts represent a reasonable worst case scenario based on the provided conceptual project plans and preliminary grading plans for the tract improvements. Potential impacts were expected to occur where proposed construction or development activities would result in temporary or permanent modification of sensitive communities or habitats occupied by special-status species. Impacts to biological resources within the study area were evaluated by determining the sensitivity, significance, or rarity of each resource that would be adversely affected by the proposed project, and thresholds of significance were applied to determine if the

impact constituted a significant impact. The significance threshold may be different for each habitat or species and is based on the resource's rarity or sensitivity and the level of impact that would result from the proposed project. Where potential project-related impacts to sensitive resources were identified, measures for avoiding or minimizing adverse effects to these resources were recommended.

5. Project-specific Impacts and Mitigation Measures

The following sections identify and discuss the biological impacts that could occur during and after construction of the proposed project. Sub-section 5(a) "Project-wide" identifies impacts that could occur during all phases of the project and includes mitigation measures that must be implemented throughout the duration of the project. Sub-sections 5(b), (c), and (d), identify impacts that are expected to occur as a result of construction of the proposed phases and provide references to the appropriate project-wide mitigation measures to off-set the specific activities impact.

a. Project-wide

The proposed project has potential to impact a variety of biological resources within and adjacent to the project site. General construction activities associated with the various phases of project implementation have the potential to directly impact riparian habitats, wetland habitats, and natural plant communities including oak woodlands, and special-status plant and animal species. Aquatic resources within and adjacent to the study area could also be indirectly impacted by erosion and sedimentation. Proposed residential, recreational, agricultural uses and fire protection buffers have potential to impact wildlife and riparian areas through fuel management, vegetation removal, increased human presence, and by increased storm water runoff containing pollutants. Such pollutants may include residual hydrocarbons, fertilizers, and other chemicals that are commonly used in residential and agricultural developments.

1) Jurisdictional Riparian and Wetland Habitat Impacts

Construction and future uses of the proposed project have the potential to cause direct and indirect impacts to riparian and wetland habitats associated with the on-site drainages and Los Berros Creek. Direct impacts would occur as a result of road, bridge, and culvert construction and use within or adjacent to existing drainages. Table V.C.-3 provides a summary of estimated acreages of direct impacts to jurisdictional areas. Impact quantities in Table V.C.-3 are based on conceptual project plans and preliminary grading plans, and represent a reasonable worst case scenario. Estimated impact quantities are not intended for project permitting purposes.

As shown in Table V.C.-3, the proposed project includes constructing road crossings and other project elements within federal and state jurisdictional areas. Implementation of the current plans would directly impact jurisdictional areas in 14 locations. Table V.C.-4 summarizes the locations of the direct impacts to jurisdictional areas that may result from project implementation. Please note that unaffected drainages are not included in the table. Figure V.C.-2 provides a graphical representation of the anticipated impact areas.

TABLE V.C.-3
Estimated Impact Areas within ACOE and CDFG Jurisdiction

Habitat	Total Area in sq. ft. (acres)	Permanent Impact Areas in sq. ft. (acres)	Temporary Impact Areas in sq. ft. (acres)
ACOE Jurisdictional Areas			
Wetlands	16,738 sq. ft (0.38 ac)	14,952 sq. ft (0.34 ac)	1,786 sq. ft (0.04 ac)
Other Waters	2,004 sq. ft (0.05 ac)	1,126 sq. ft (0.03 ac)	878 sq. ft (0.02 ac)
	TOTAL ACOE IMPACT AREAS	16,078 sq. ft (0.37 ac)	2,664 sq. ft (0.06 ac)
CDFG Jurisdictional Areas	106,225 sq. ft (2.44 ac)	44,353 sq. ft (1.02 ac)	61,872 sq. ft (1.42 ac)

TABLE V.C.-4
Summary of Locations for Direct Impacts to Jurisdictional Areas

Project Element	Drainage							
	A	B	C	D	E	F	G	I
Future Development (Dude Ranch Access Road)	X	X						
Main Road 1 (Crossings E.2 and G.1)					X		X	
Main Road 2 (Crossings C.1, D.1, and E.3)			X	X	X			
Road L (Crossing E.1)					X			
Lot 92 Driveway					X			
Force Main Utilities for Sewage Treatment Facility						X	X	
Agriculture Replacement							X	
Road D (Access Residential Sub-cluster C)								X
Lot 56								X

BIO Impact 1 **Construction of road crossings and other structures within jurisdictional drainages would directly impact riparian and wetland habitat quality within the site and downstream from the site.**

BIO/mm-1 At the time of application for subdivision public improvement plans or grading permits, the applicant shall obtain all necessary permits, approvals, and authorizations from jurisdictional agencies. These may include, but may not be limited to: (1) ACOE Section 404 Nationwide Permit or Individual Permit for impacts to ACOE jurisdictional wetlands or other waters; (2) RWQCB Section 401 Water Quality Certification for discharges in to "Waters of the U.S." and/or "Waters of the State"; and (3) CDFG Section 1602 Streambed Alteration Agreement for activities within the tops of banks or outer edges of riparian canopies (whichever extends furthest from the streambeds) of drainages.

BIO/mm-2 Prior to approval of subdivision public improvement plans or grading permit issuance, the applicant shall provide funding for an environmental monitor for all measures requiring environmental mitigation to ensure compliance with County Conditions of Approval and EIR mitigation measures. The applicant shall obtain from a county-approved monitor a cost estimate, based on a county-approved work scope. The environmental monitor shall be under contract to the County of San Luis Obispo. Costs of the monitor and any county administrative fees shall be paid for by the applicant. The monitor shall be responsible for (1) ensuring that procedures for verifying compliance with environmental mitigations are followed; (2) lines of communication and reporting methods; (3) daily and weekly reporting of compliance; (4) construction crew training regarding environmentally sensitive areas; (5) authority to stop work; and (6) action to be taken in the event of non-compliance. Monitoring shall be at a frequency and duration determined by the affected natural resource agencies (e.g., ACOE, RWQCB, CDFG, USFWS, and the County of San Luis Obispo).

BIO/mm-3 At the time of application for subdivision improvement plans or grading permits, all riparian and wetland areas shall be shown on all construction plans. The riparian/wetland areas shown on grading plans shall be based on the field data collected as part of the EIR analysis. All riparian vegetation planned for removal shall be specified on construction plans. Except for activities requiring removal of riparian trees and associated understory vegetation that are specified on construction plans, all ground disturbances and vegetation removal shall be prohibited within a 20-foot setback from the outer edge of the riparian canopy of any drainage onsite. The construction plans shall clearly show the location of sturdy construction fence that delineates allowable site access and disturbance areas. The number of access routes, size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the project goal.

BIO/mm-4 At the time of application for subdivision improvement plans or grading permits, the following measure shall be shown on plans: During construction, to avoid erosion and downstream sedimentation, and to reduce impacts to aquatic species, no work shall occur during the rainy season (October 15 through April 15) within 20-feet of the on-site drainages.

BIO/mm-5 At the time of application for subdivision improvement plans or grading permits, the following measure shall be shown on plans for all work conducted within creeks and drainages: During construction, equipment access and construction shall be conducted from the banks rather than from within drainages. No equipment or fill material shall be staged in or adjacent to any of the site drainages.

BIO/mm-6 At the time of application for subdivision improvement plans or grading permits, the applicant shall submit a Habitat Revegetation and Restoration Plan for implementation within the project site. The plan shall be prepared by a qualified individual familiar with riparian vegetation and be reviewed and approved by the County. The plan shall include but not be limited to the following elements, and shall be modified as applicable to incorporate regulatory agency requirements associated with the permitting process:

a. Identification of locations selected for revegetation and restoration, including justification for site selection. Compensatory mitigation shall occur within the affected drainage to the maximum extent feasible.
b. Itemized list of quantity, size and types of plants to be replanted, as well as any other necessary components (e.g., temporary irrigation, amendments, etc.), and methodologies to insure successful reestablishment. Native riparian and wetland species from locally collected stock shall be used.
c. Final quantification of impact areas and any required mitigation ratios for the impacted areas, including removal or damage of vegetation. The plan shall incorporate a minimum 2:1 ratio for permanently impacted riparian understory and wetland vegetation (, and minimum 1:1 ratio for temporary impacts to riparian understory and wetland habitat.
d. Provide for the in-kind replacement and restoration of any native riparian trees that are removed or damaged on a 3:1 ratio; with the exception of oak trees (4:1 for oaks removed and 2:1 for oaks impacted).
e. Detailed maintenance plan, including irrigation, use of natural rain cycles, and removal of invasive vegetation.
f. A schedule and success criteria for a five-year monitoring and reporting program that is structured to ensure the success of the restoration plan, including defined attainable and measureable goals and objectives. The reporting program shall include methods and analysis of results, identification of plan successes and failures, adaptive management plans, and recommendations for failed restoration efforts.
g. Incorporate all additional measures recommended by jurisdictional agencies.

Planting according to the approved revegetation plan shall be completed prior to final inspection.

BIO/mm-7 Prior to final acceptance of subdivision improvements or construction permit completion, the applicant must retain a qualified biologist to conduct the five year revegetation monitoring program. The biologist shall supervise site preparation, timing, species utilized, planting

installation, maintenance, monitoring, and reporting of the revegetation/ restoration efforts. The applicant shall file a performance security with the County Department of Planning and Building to complete and maintain revegetation and restoration activities for the five year period.

BIO/mm-8 If on-site mitigation for permanent loss of riparian habitat is not feasible, an off-site riparian mitigation component shall be incorporated into the Revegetation and Restoration Plan, subject to review and approval by jurisdictional agencies. Plans for off-site mitigation shall include a monitoring schedule and success criteria to ensure that any off-site restoration/enhancement efforts are successful.

Residual Impact Construction of the project would result in permanent and temporary adverse effects to riparian and wetland habitat; however, with implementation of the above mitigation measures, potential impacts associated with degradation of onsite and downstream riparian and wetland areas would be considered *less than significant with mitigation, Class II*.

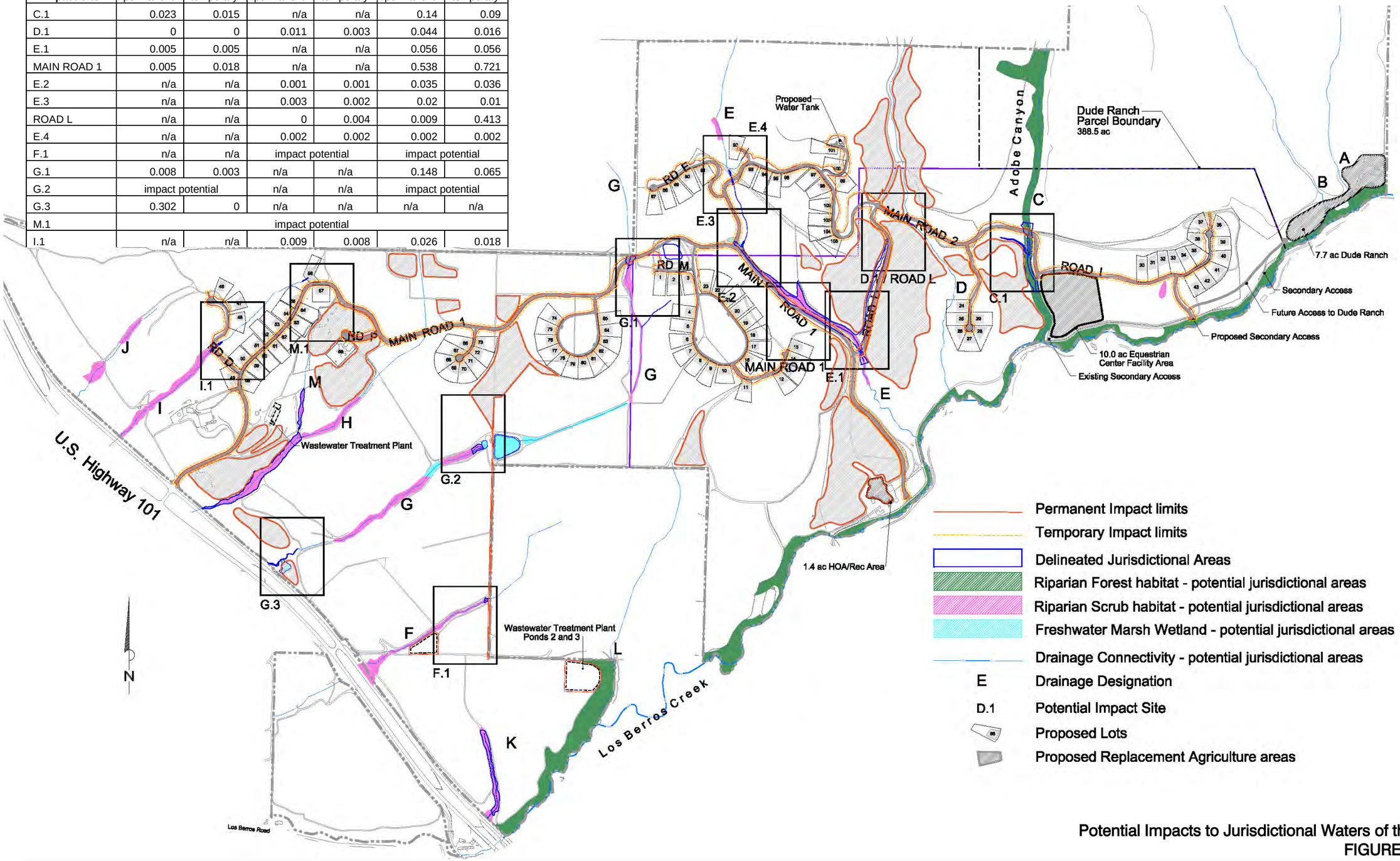
Indirect impacts consisting of sedimentation and water pollution would result from conversion of natural areas to agricultural or residential uses, increased use of chemical fertilizers and pesticides, and drainage from paved roadways. Studies have shown that the use of riparian and grass buffers are effective at filtering sediment and pollution from run off generated on agricultural and livestock operations (Virginia, 2000). Use, maintenance, or staging of construction equipment in areas adjacent to drainages could also increase the risk of fuel spills or leaks into sensitive habitats during construction.

BIO Impact 2 Construction and future uses of the project could indirectly impact riparian and wetland habitat quality within the site and downstream from the site.

Implement WAT/mm-11 through WAT/mm-14, and WW/mm-1.

BIO/mm-9 At the time of application for subdivision improvement plans or grading permits, the applicant shall submit a final drainage plan to the County Public Works Department for review and approval. The drainage plan shall ensure that water discharges into riparian and wetland areas shall be done in a non-erosive manner. Erosion control measures shall incorporate the use of natural-fiber, biodegradable meshes for use in erosion blankets and straw waddles to avoid unanticipated harm to terrestrial and aquatic species. All approved drainage measures shall be installed prior to final acceptance of subdivision improvements.

IMPACTS TO JURISDICTIONAL WATERS (acres)						
	ACOE Wetlands		ACOE Other Waters		CDFG	
Impact Site	permanent	temporary	permanent	temporary	permanent	temporary
C.1	0.023	0.015	n/a	n/a	0.14	0.09
D.1	0	0	0.011	0.003	0.044	0.016
E.1	0.005	0.005	n/a	n/a	0.056	0.056
MAIN ROAD 1	0.005	0.018	n/a	n/a	0.538	0.721
E.2	n/a	n/a	0.001	0.001	0.035	0.036
E.3	n/a	n/a	0.003	0.002	0.02	0.01
ROAD L	n/a	n/a	0	0.004	0.009	0.413
E.4	n/a	n/a	0.002	0.002	0.002	0.002
F.1	n/a	n/a	impact potential		impact potential	
G.1	0.008	0.003	n/a	n/a	0.148	0.065
G.2	impact potential		n/a	n/a	impact potential	
G.3	0.302	0	n/a	n/a	n/a	n/a
M.1	impact potential					
I.1	n/a	n/a	0.009	0.008	0.026	0.018



Potential Impacts to Jurisdictional Waters of the U.S.
FIGURE V.C.-2

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BIO/mm-10 At the time of application for subdivision improvement plans or grading permits, and subsequent individual lot construction permits, all applicable plans shall clearly show stockpile and staging areas. Stockpiles and staging areas shall not be placed in areas that have potential to experience significant runoff during the rainy season. All project-related spills of hazardous materials within or adjacent to project sites shall be cleaned up immediately. Spill prevention and cleanup materials shall be on-site at all times during construction. Cleaning and refueling of equipment and vehicles shall occur only within designated staging areas. The staging areas shall conform to standard BMPs applicable to attaining zero discharge of storm water runoff. No maintenance, cleaning or fueling of equipment shall occur within wetland or riparian areas, or within 50 feet of such areas. At a minimum, all equipment and vehicles shall be checked and maintained on a daily basis to ensure proper operation and to avoid potential leaks or spills.

BIO/mm-11 Prior to map recordation, permanent installation of filtration devices designed to remove oil, grease, and other potential pollutants from storm water runoff shall be installed within thirty days after completion of grading for all project runoff directed to drainages within or adjacent to the project site.

BIO/mm-12 If surfactants or herbicides are used for restoration or residential purposes following construction, application of surfactants or herbicides shall not occur within 20 feet of riparian or wetland areas. Application of herbicides and pesticides shall be conducted in accordance to the product label and performed by an individual in possession of a valid Qualified Applicator License.

This measure shall be included on an additional map sheet prior to recordation of the final map and incorporated in the Covenants, Conditions, and Restrictions.

Residual Impact With implementation of the above mitigation measures, indirect impacts associated with degradation of onsite and downstream aquatic areas due to sedimentation or storm water runoff would be considered *less than significant with mitigation, Class II*.

2) Impacts to Coast Live Oak Woodland

Construction and future uses of the proposed project elements (not including off-site road improvements) would disturb approximately 169 individual oak trees that are greater than five inches diameter at breast height (DBH). In addition to the development of proposed residential lots, fuel modification would occur within the understory of oak woodland areas, totaling approximately 14.35 acres. AutoCAD was utilized to calculate the number of acres of oak woodland that would be disturbed (refer to Figures V.C.-1 through V.C.-3). The quantity of disturbed oak trees was determined by applying a reasonable case scenario to each project

element. An individual tree was considered "removed" if it was reasonable to assume that project activities would physically remove the individual or otherwise result in unsuitable growing conditions. Individual oak trees were counted as removed if they fell within the following parameters: the individuals were located within any proposed road, utility, or structural building envelope. An individual tree was considered impacted but not removed if it was reasonable to assume that project activities would physically alter the tree (e.g., trimming) or the trees immediate surroundings (e.g., changes in topography or understory). Individual oak trees were counted as "impacted but not removed" if they fell outside of the building envelope or development footprint, and within 30 feet of any proposed road, utility, or structural building envelope. Based on subsequent consultation with the California Department of Forestry and Fire Protection (CAL FIRE, 2011), including onsite field inspections to determine the required level of vegetative fuel management, CAL FIRE determined that trimming of oak trees would occur within 30 feet of the structure. In lieu of actual construction plans for residential lot development, this assessment assumes the structure boundaries would be the delineated building envelope for the residential lots. Upon review of proposed lots within or in the vicinity of oak woodland, CAL FIRE recommended that fuel management within 30 to 100 feet of the structure would not likely require trimming of live limbs, and would be limited to dead matter and understory. Assuming a worst-case-scenario, it is likely that up to 25 percent of oak trees within the 30- to 100-foot zone surrounding each structure would be impacted by fuel modification actions. In addition, based on information provided by the applicant (RRM, 2008), all oak trees within proposed vineyard replacement areas would remain; these trees are considered impacted due to ground disturbance and other activities within the root zone of each tree. Table V.C.-5 provides an updated summary of estimated disturbances to oak trees within proposed residential lots. The assessment parameters assume that disturbances would occur during the grading of the proposed residential lots, roads, and utilities; or, during subsequent vegetation management (required by CAL FIRE) that would occur after construction is complete. Under a reasonable worst case scenario, impacts resulting from subsequent vegetation management include trimming, understory removal, landscaping, watering, grazing, and fire protection buffers.

TABLE V.C.-5
Summary of Disturbed Coast Live Oak Trees

Project Element	# of Trees Removed	# of Trees Impacted	Total Trees Disturbed
Vineyard Replacement	0	32	32
Residential Sub-cluster A (Lots 11-15)	14	14	28
Residential Sub-cluster B (Lots 24-29 and Access Road J)	33	30	63
Residential Sub-cluster C (Lots 46-48, 52-56, 62, 64-65, and Access Road D)	8	32	40
Main Road 2	0	6	6
Total	55	114	169

Pursuant to SB 1334, the County requires significant impacts to oak trees and oak woodlands to be mitigated. Significant impacts are defined as cutting or removing ten percent or more of the oak woodland canopy or removing more than ten oak trees. County guidelines encourage project modifications to avoid or reduce impacts to oak woodland. If project modifications are not feasible and conversion of oak woodland is unavoidable, the County allows mitigation for oak woodland impacts to be implemented via oak tree replanting and implementation of a conservation easement, or payment of a fee to the Wildlife Conservation Board. Tree replanting can constitute up to 50 percent of the required mitigation; and all planted trees must be monitored for seven years. Potential replant areas are located near Drainage D, across from Residential Sub-cluster B, or in the annual grassland above the proposed water tank (refer to Figures V.A.-1.1 through V.A.-1.3). The remaining 50 percent of the mitigation can be implemented via the following procedures: 1) development of a third party Conservation Easement. The Conservation Easement must include 2,000 square feet for each tree removed and be controlled by a land trust; or, 2) payment of a fee up to $970 for each tree removed. Payment would be issued the California Wildlife Conservation Board.

BIO Impact 3 **Development of the proposed project would result in the removal of and/or impacts to an estimated 169 coast live oak trees that are greater than five inches DBH, as well as impacts to approximately 14.35 acres of native oak woodland habitat. In accordance with Kuehl Bill mitigation techniques, half of the estimated oak trees that are removed or impacts can be replaced, but due to the long time period required for the planted trees to develop equivalent oak woodland habitat values, and the fact there is no assurance that oak trees within lot boundaries would be protected in the future, impacts to oak trees and oak woodlands are significant and unavoidable.**

BIO/mm-13 At the time of application for subdivision improvement plans or grading permits, the applicant shall prepare an Oak Tree Inventory, Avoidance, and Protection Plan as outlined herein. The plan shall be reviewed by a County-approved arborist prior to approval of grading permits, and shall include the following items:

a. Comprehensive Oak Tree Inventory. This shall include the following information:

    1. An inventory of all oak trees at least five inches in diameter at breast height within 50 feet of all proposed impact areas. All inventoried trees shall be shown on maps. The species, diameter at breast height, location, and condition of these trees shall be documented in data tables.
    2. Identification of trees that will be retained, removed, or impacted. This information shall be shown on maps and cross-referenced to data tables described in item a.
    3. The location of proposed structures, utilities, driveways, grading, retaining walls, outbuildings, community water and wastewater

facilities, and impervious surfaces shall be shown on maps. The applicant shall clearly delineate the building sites/building control lines containing these features on the project plans. In addition, the plans shall include any fenced areas for livestock or pets and fuel reduction areas prescribed by CAL FIRE.

4. A landscaping plan that describes the size and species of all trees, shrubs, and lawns proposed to be planted in the project area, including the limits of irrigated areas and areas proposed for treated effluent disposal.
5. Revised drainage patterns that are within 100 feet upslope of any existing oak trees to remain. All reasonable efforts shall be made to maintain the historic drainage patterns and flow volumes in the vicinity of these oak trees. If not feasible, the drainage plan shall clearly show which trees would be receiving more or less drainage.

b. Oak Tree Avoidance Measures. Grading and development within proposed lots shall avoid the removal of oak trees to the maximum extent possible. Such activities shall minimize potential disturbance to oaks and their associated root zones to the maximum extent possible, within final sits plans requiring concurrence from county staff to ensure compliance with this provision.

c. Oak Tree Protection Guidelines. Tree protection guidelines and a root protection zone shall be established and implemented for each tree to be retained that occurs within 50 feet of impact areas. The following guidelines shall be included:

1. A qualified arborist shall determine the critical root zone for each retained tree on a case-by-case basis, based upon tree species, age, and size. This area is generally defined as 1.0 to 1.5 times its diameter at breast height. At a minimum, the critical root zone shall be the distance from the trunk to the drip line of the tree.
2. All trees to remain within 50 feet of construction or grading activities shall be marked for protection (e.g., with flagging) and their root zone fenced prior to any grading. Grading, utility trenching, compaction of soil, or placement of fill shall be avoided within these fenced areas. If grading in the root zone cannot be avoided, retaining walls shall be constructed to minimize cut and fill impacts. Care shall be taken to avoid surface roots within the top 18 inches of soil. If any roots must be removed or exposed, they shall be cleanly cut and not left exposed above the ground surface. The project arborist shall approve any work within the root protection zone.
3. Unless previously approved by the county, the following activities are not allowed within the root zone of existing or newly planted oak trees: year-round irrigation (no summer watering, unless

"establishing" new tree or native compatible plants for up to three years); grading (includes cutting and filling of material); compaction (e.g., regular use of vehicles); placement of impermeable surfaces (e.g., pavement); disturbance of soil that impacts roots (e.g., tilling).

4. The applicant shall minimize trimming of oak trees to remain on-site. Removal of larger lower branches should be minimized to 1) avoid making tree top heavy and more susceptible to "blow-overs", 2) reduce having larger limb cuts that take longer to heal and are much more susceptible to disease and infestation, 3) retain wildlife habitat values associated with the lower branches, 4) retain shade to keep summer temperatures cooler (retains higher soil moisture, greater passive solar potential, provides better conditions for oak seedling volunteers) and 5) retain the natural shape of the tree. The amount of trimming (roots or canopy) done in any one season shall be limited as much as possible to reduce tree stress/shock (ten percent or less is best, 25 percent maximum). If trimming is necessary, the applicant shall use a certified arborist when removing limbs. Unless a hazardous or unsafe situation exists, major trimming shall be done only during the summer months.

BIO/mm-14 At the time of application for subdivision improvement plans or grading permits, the applicant shall submit an Oak Tree Replacement, Monitoring, and Conservation Plan. Of those trees identified in the Oak Tree Inventory, Avoidance, and Protection Plan as being removed or impacted, 50 percent shall be replaced per county and Kuehl Bill standards. A conservation easement or monetary contribution to the Oak Woodlands Conservation Fund shall be used for the remaining mitigation.

a. The county-approved arborist shall provide or submit approval of an oak tree replacement plan at a minimum 4:1 ratio for oak trees removed and a minimum replacement ration of 2:1 ratio for oak trees impacted (i.e., disturbance within the root zone area).

1. Replacement oak trees shall be from regionally or locally collected seed stock grown in vertical tubes or deep one-gallon tree pots. Four-foot diameter shelters shall be placed over each oak tree to protect it from deer and other herbivores, and shall consist of 54-inch tall welded wire cattle panels (or equivalent material) and be staked using T-posts. Wire mesh baskets, at least two feet in diameter and two feet deep, shall be use below ground. Planting during the warmest, driest months (June through September) shall be avoided. The plan shall provide a species-specific planting schedule. If planting occurs outside this time period, a landscape and irrigation plan shall be submitted prior to permit issuance and implemented upon approval by the county.

2. Replacement oak trees shall be planted no closer than 20 feet on center and shall average no more than four planted per 2,000 square feet. Trees shall be planted in random and clustered patterns to create a natural appearance. Replacement trees shall be planted in natural appearance. As feasible, replacement trees shall be planted in a natural setting on the north side of and at the canopy/dripline edge of existing mature native oak trees; on north-facing slopes; within drainage swales (except when riparian habitat present); where topsoil is present; and away from continuously wet areas (e.g., lawns, irrigated areas, etc). Replanting areas shall be either in native topsoil or areas where native topsoil has been reapplied. A seasonally timed maintenance program, which includes regular weeding (hand removal at a minimum of once early fall and once early spring within at least a three-foot radius from the tree or installation of a staked "weed mat" or weed-free mulch) and a temporary watering program, shall be developed for all oak tree planting areas. A qualified arborist/botanist shall be retained to monitor the acquisition, installation, and maintenance of all oak trees to be replaced. Replacement trees shall be monitored and maintained by a qualified arborist/botanist for at least seven years or until the trees have successfully established as determined by the County Environmental Coordinator. Annual monitoring reports will be prepared by a qualified arborist/botanist and submitted to the County by October 15 each year. Annual monitoring reports will include specifics discussed below.
3. The restored area shall be at a minimum equal in size to the area of oak woodlands lost of disturbed.

BIO/mm-15 The applicant can mitigate the remaining 50 percent of the oak woodland impacts by one of the following ways: 1) provide for the protection of oak woodland habitat in perpetuity through acquisition or donation of a conservation easement that includes 2000 square feet per tree removed; 2) provide for funding to the California Wildlife Conservation Board to be used for the purchase of Oak Woodland Conservation Easements.

a. Prior to approval of subdivision public improvement plans or grading permit issuance, the applicant shall record a conservation easement that protects 2000 square feet of oak woodland habitat for each tree removed in perpetuity. The conservation easement shall be controlled by a qualified conservation organization. Potential conservation organizations include but are not limited to: The Nature Conservancy, San Luis Obispo Land Conservancy, or Greenspace-Cambria Land Trust.

   If the applicant is not able to establish a conservation easement, the applicant shall provide funding to the California Wildlife Conservation

Board to be used for the purchase of Oak Woodland Conservation Easements. The final funding amount shall include $970.00 for each tree removed.

Residual Impact Implementation of mitigation measures including protection of oak trees to remain and revegetation of oak woodland would partially mitigate impacts; however, based on the significant loss of oak trees and oak woodland, and the time required for replacement vegetation to develop similar habitat values as the impacted oak woodland, residual impacts would occur and potential impacts would be considered *significant and unavoidable, Class I.*

3) Impacts to Natural Communities and Special-status Species

Construction of the project would result in permanent impacts to natural communities, which provide habitat for special-status plant and animal species. Approximately 114 acres of grassland, 9.20 acres of coastal scrub, 0.66 acres of central coast riparian scrub, 0.55 acres of freshwater marsh wetland, 14.35 acres of coast live oak woodland, and 0.21 acres of riparian forest would be impacted by project related activities. These acreages include impacts associated with vegetation management as mandated by CAL FIRE, including understory management. Construction activities including grading, paving, building, and replacement agriculture within these communities would impact special-status species.

As discussed in Section 1.(2)a) Survey Methods and Results, survey efforts were sufficient to verify the presence of special-status species including approximately 80 Jones' mallow, three club-haired mariposa lily, white-tailed kite, cooper's hawk, pond turtles, and California red-legged frog.

BIO Impact 4 **Implementation of the proposed project would directly impact natural communities that provide habitat for special-status plant and wildlife species.**

BIO/mm-16 At the time of application for subdivision improvement plans or grading permits, the applicant shall submit a Special-status Plant Mitigation Plan that provides for the propagation, planting, and monitoring of Jones' mallow and club-haired mariposa lily at a 5:1 replacement ratio. The mitigation plan shall detail methods for transplanting, propagating, planting, and maintaining the special-status plant species that would be impacted. The plan shall include the following minimum standards:

a. Identification of replant location(s), including justification for the suitability of the site(s). The replant area shall not be subject to vegetation management (i.e., agricultural areas or fire buffer zones) and shall not displace any sensitive native habitat.
b. Specific habitat management and protection measures to ensure long-term maintenance and protection of Jones' mallow and club-haired mariposa lily, such as cattle exclusion, fencing and signage, and a seasonally-timed invasive plant removal program.

c. To ensure the success of any planted or transplanted individuals, the mitigation program will include monitoring and reporting guidelines, such as annual population inventories and habitat assessments, establishment of monitoring reference sites, success criteria based on identified and measureable goals, an adaptive management program to address both foreseen and unanticipated circumstances, and remedial measures to address negative impacts to Jones' mallow and club-haired mariposa lily that may occur during and following construction, and reporting requirements to track successes and failures and ensure consistent documentation methods.

BIO/mm-17 During the initial disturbance of any natural communities or aquatic areas a qualified biological monitor shall be on-site to capture and relocate any native wildlife species (including California red-legged frog and southwestern pond turtle) that may be harmed by construction activities. The applicant is responsible to ensure that the biological monitor is approved by the appropriate agency to capture and release protected species.

Residual Impact With implementation of the above mitigation measures, including habitat restoration, impacts associated with potential loss of special-status species would be considered *less than significant with mitigation, Class II.*

4) Impacts to Nesting Birds

The riparian corridors, oak woodlands, individual oak trees, coastal scrub, and grasslands on the project site provide suitable roosting, nesting, and foraging habitat for a variety of bird species, including several that are considered sensitive by resource agencies. Nesting birds could be directly and/or indirectly impacted by construction activities occurring any time during the typical nesting season (from March 1 to August 30). Tree-nesting birds could have nests directly damaged or destroyed during tree-removal activities, or their nesting and foraging behaviors could be indirectly affected by noise and other sources of construction related disturbance. Ground nesting birds such as western meadow lark could have nests directly impacted and behaviors indirectly impacted during any construction activities in grasslands on-site.

BIO Impact 5 **Implementation of project activities in or adjacent to natural plant communities has potential to impact birds by disturbing their nesting behavior.**

BIO/mm-18 Prior to commencement of subdivision public improvements or site grading, and subsequent individual lot construction permits, if construction activities are scheduled to occur during the typical bird nesting season (from March 1 to August 31) a qualified biologist shall be retained to conduct a pre-construction survey (approximately one week prior to construction) to determine presence/absence for tree and ground nesting birds. If no nesting activities are detected within the proposed work area, noise-producing construction activities may proceed and no

further mitigation is required. If nesting activity is confirmed during pre-construction nesting surveys or at any time during the monitoring of construction activities, work activities shall be delayed within 300 feet (500 feet if raptors) of active nests until the young birds have fledged and left the nest. In addition, the results of the surveys shall be passed immediately to the CDFG and the County, possibly with recommendations for buffer zone changes, as needed, around individual nests. Tree removal in riparian zones shall be monitored and documented by the biological monitor regardless of time of year.

Residual Impact With implementation of mitigation, including preconstruction surveys and avoidance measures, impacts associated with potential impacts to nesting birds would be considered *less than significant with mitigation, Class II.*

5) Impacts to California Red-legged Frog

Los Berros Creek, the various drainages, and existing agricultural ponds located throughout the project area provide suitable habitat for California red-legged frog. Rincon Consultants conducted protocol level surveys for California red-legged frog in October and November of 2000. The surveys identified nine California red-legged frogs centrally located in the project site. These individuals were observed in the freshwater marsh and in-stream stock pond that are associated with Drainage G. The proposed project includes installation of road crossings, removal of an existing pond, grading, and lot development within California red-legged frog breeding and dispersal habitat. These activities have potential to impact or result in "take" of California red-legged frog. It is anticipated that these impacts would occur during implementation of the subdivision improvements.

BIO Impact 6 **Construction of the project has potential to impact breeding and dispersal habitat for California red-legged frog.**

Implement WAT/mm-11 through WAT/mm-14, and BIO/mm-6 through BIO/mm-10.

BIO/mm-19 Prior to approval of subdivision public improvements or grading permit issuance, the applicant shall coordinate with USFWS to determine the potential for take of California red-legged frog during the proposed activities. Such coordination may result in a Section 10 Consultation (no federal nexus) or Section 7 Consultation (federal nexus) pursuant to the FESA. Formal consultation may result in issuance of a Habitat Conservation Plan or Biological Opinion both of which would provide subsequent mitigation measures that would minimize the potential for take of California red-legged frog during project activities. Subsequent mitigation measures may include but will not be limited to the following:

a. Only USFWS-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frog.

b. Ground disturbance will not begin until written approval is received from the USFWS that the biologist is qualified to conduct the work.
c. An USFWS-approved biologist will survey the project area 48 hours before the onset of construction activities. If any life stage of the California red-legged frog is found and these individuals are likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work activities begin. The USFWS-approved biologist will relocate the California red-legged frog the shortest distance possible to a location that contains suitable habitat and will not be affected by the activities associated with the proposed project. The USFWS-approved biologist will maintain detailed records of any individuals that are moved (e.g., size, coloration, any distinguishing features, photographs [digital preferred]) to assist him or her in determining if trans-located animals are returning to the point of capture.
d. Before any construction activities begin on the project, an USFWS-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and its habitat, the specific measures that are being implemented to conserve the species for the current project, and the boundaries within which the project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.
e. An USFWS-approved biologist will be present at the construction site until all California red-legged frogs have been removed, workers have been instructed, and disturbance of the habitat has been completed. After this time, the state or local sponsoring agency will designate a person to monitor on-site compliance with all minimization measures. The USFWS-approved biologist will ensure that this monitor receives the outlined training and in the identification of California red-legged frog. If the monitor or the USFWS-approved biologist recommends that work be stopped because California red-legged frog would be affected to a degree that exceeds the levels anticipated by the USFWS during the review of the proposed action, they will notify the project superintendent immediately. The superintendent will either resolve the situation by eliminating the effect immediately or require that all actions that are causing these effects be halted. If work is stopped, the USFWS will be notified as soon as is reasonably possible.
f. During construction activities, all trash that may attract predators shall be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas.
g. Habitat contours will be returned to their original configuration at the end of the project activities. This measure will be implemented in all areas disturbed by activities associated with the project, unless the

USFWS determine that it is not feasible or modification of original contours would not benefit the California red-legged frog.

h. The number of access routes, size of staging areas, and the total area of activity will be limited to the minimum necessary to achieve the project goal. Environmentally Sensitive Areas will be established to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to California red-legged frog habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.

i. The applicant will coordinate with the environmental monitor in an effort to schedule work activities for times of the year when impacts to the California red-legged frog would be minimal. For example, work that would affect large pools that may support breeding would be avoided, to the maximum degree practicable, during the breeding season (November through May). Isolated pools that are important to maintain California red-legged frog through the driest portions of the year would be avoided, to the maximum degree practicable, during the late summer and early fall. Habitat assessments, surveys, and informal consultation between the USFWS during project planning shall be used to assist in scheduling work activities to avoid sensitive habitats during key times of year.

j. To control sedimentation during and after project implementation, the applicant will implement best management practices (BMPs) outlined in any authorizations or permits, issued under the authorities of the Clean Water Act that it receives for the project. If BMPs are ineffective, the applicant will attempt to remedy the situation immediately, in consultation with the USFWS.

k. If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inch to prevent California red-legged frogs from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. The methods and materials used in any dewatering will be determined by the USFWS on a site-specific basis. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible; any imported material will be removed from the streambed upon completion of the project.

l. During construction, water will not be impounded in a manner that may attract California red-legged frogs to the project area.

m. An USFWS-approved biologist will permanently remove any individuals of exotic species, such as bullfrogs (*Rana catesbeiana*), crayfish, and centrarchid fishes from the project area, to the maximum extent possible. The USFWS-approved biologist will be responsible

for ensuring his or her activities are in compliance with the California Fish and Game Code.

Residual Impact With implementation of the above mitigation measures, direct impacts to California red-legged frog associated with project activities would be considered *less than significant with mitigation, Class II.*

6) Impacts to South-central California Coast Steelhead

Development of the proposed project would result in decreased water quality in Los Berros Creek, which is designated steelhead critical habitat. The project includes installation of 14 road crossings within tributaries to Los Berros Creek; and, would convert approximately 150 acres of agricultural land and natural plant communities to impervious surfaces in the Los Berros Creek watershed. This land conversion would result in a 2.8 percent increase in net peak runoff during a 100-year storm (refer to Section V.B., Water Resources). The applicant proposes to maintain existing drainage patterns by allowing stormwater to discharge into existing natural swales, which direct runoff into Los Berros Creek. The increased runoff would include pollutants such as petroleum products, herbicides, pesticides, and urban debris, which would contribute to the general decrease of water quality within the creek. As discussed in Section V.B., incorporation of Best Management Practices (BMPs) and Low Impact Development (LID) measures are recommended to ensure compliance with federal, state, and local water quality regulations related to water quality and stormwater runoff.

As discussed in Section V.B. (Water Resources), surface water quantity with in Los Berros Creek has decreased over the last two decades. Such declines are a result of increased demands on alluvial waters during times of drought. As noted, the applicant eliminated the use of wells (for domestic use) that demonstrated influence on Los Berros Creek. Additional analysis showed that use of Wells 10 and 11, in addition to the use of agricultural wells (i.e., Well 9) may influence the creek. In addition to the preparation, implementation, and enforcement of a Water Master Plan, production limitations, and limiting use of Well 11 to the rainy season (when well production would not reduce stream flow) are recommended and included as mitigation (refer to Section V.B., Water Resources).

BIO Impact 7 **The proposed project would result in a decrease in water quality within Los Berros Creek and steelhead critical habitat.**

Implement BIO/mm-1 through BIO/mm-12, and WAT/mm-1 through WAT/mm-15.

Residual Impact Implementation of the above mitigation measures will minimize the proposed project's effects on aquatic habitats by ensuring protection of baseflow within Los Berros Creek, reducing increased runoff, and minimizing discharge of sediments and other pollutants; therefore, potential impacts associated with the decrease in water quality and quantity in steelhead critical habitat would be considered *less than significant (Class II).*

7) Impacts Resulting From Vineyard Replacement

The proposed project includes replanting approximately 143 acres of vineyard for the 113 acres that would be removed by project activities. Some of the areas that are proposed for the replacement vineyards currently support natural plant communities and are located adjacent to waters of the U.S. Installation of the proposed agriculture replacement areas would impact 32 coast live oak trees and the following plant communities: Approximately 44.45 acres of grassland; approximately 1.85 acres of coast live oak woodland; approximately 1.11 acres of coastal scrub; and, approximately 0.24 acres of fresh water marsh (refer to Figure V.C.2). Activities associated with the replacement vineyards would permanently impact these plant communities and any special-status species or nesting birds that may exist in these habitats. In addition, the replacement vineyards that are located adjacent to waters of the U.S would increase erosion and siltation into the drainage system.

Studies conducted by Virginia Tech University have shown that an estimated 84 to 90 percent of sediment from cultivated agricultural fields can be trapped by riparian buffer areas. The U.S. Department of Agriculture Natural Resources Conservation Service recommends a minimum buffer width of at least 30 percent of the geomorphic floodplain, or at least 35 feet on all streams (Virginia Tech, 2009).

BIO Impact 8 **Installation of the replacement vineyards could permanently impact special-status plant species and coast live oak trees.**

Implement BIO/mm-13 through BIO/mm-19.

Residual Impact With implementation of the above mitigation measures, potential impacts to special-status species and oak trees, resulting from the replacement vineyards (including habitat loss and changes in the understory) would be *less than significant with mitigation, Class II*.

BIO Impact 9 **Installation and future uses of the replacement vineyards directly adjacent to waters of the U.S would increase erosion and silt deposition into the drainage system.**

BIO/mm-20 At the time of application for subdivision improvement plans or grading permits, the applicant shall show on all applicable plans a 35-foot vegetated buffer between replacement vineyard areas and mapped jurisdictional areas (i.e., wetlands, waters of the U.S.). All agricultural practices including but not limited to road construction, vegetation removal, mowing, storage, and spraying shall be prohibited within the 35-foot buffer area. The applicant shall maintain and promote the growth of riparian species such as willows, coyote brush, blackberry, and grasses within the buffer areas.

Residual Impact With implementation of the above mitigation measures, impacts to waters of the U.S. resulting from the replacement vineyards would be *less than significant with mitigation, Class II*.

b. Phase One

Phase one of the proposed project includes the development of 43 residential lots, two main roads, eight secondary access roads, water supply utilities, wastewater utilities, a ranch headquarters, and an equestrian facility. These project elements would be located throughout the project site in various habitats. Project related activities including grading, building, and future uses would impact natural plant communities, coast live oak trees, aquatic areas, agricultural areas, and waters of the U.S.

1) Residential Development

Phase One of the proposed residential development project has potential to impact waters of the U.S., coast live oak woodlands, and habitat for special-status species. These impacts would occur during the construction of the main roads, wastewater treatment facilities, residential sub-clusters, replacement vineyards, and on-going fuel modification efforts mandated by CAL FIRE. The following sections discuss these specific impacts and the associated mitigation measures.

(a) Lot development

Development of Residential Sub-cluster A (Lots 11-15) and Residential Sub-cluster B (Lots 24-29) would directly impact approximately 2.22 acres of annual and perennial grassland, and 7.75 acres of coast live oak woodland and associated coastal scrub under story. Impacts to these habitats would result from lot grading, building, and vegetation removal associated with fuel reduction zones that would occur in the vicinity of the residential structures. Indirect impacts to waters of U.S. could occur during construction of Residential Sub-clusters A and B.

Residential Sub-clusters A and B: Impacts to Special-status Species

Development of Residential Sub-cluster A, Lots 11 through 15 and Residential Sub-cluster B, Lots 24-29 are located in areas that support coast live oak woodland, coastal scrub, and grassland communities. These communities may harbor special-status plant and animal species including nesting birds. Project activities could directly impact any special-status plant or animal species that are occupying the site. In addition, construction in these areas would disturb coast live oak woodland and oak trees (refer to Table V.C.-5). Section 5.a.(1) includes mitigation measures to address these impacts.

Residential Sub-clusters A and B: Indirect Impacts to Waters of the U.S.

As proposed, Residential Sub-clusters A and B are located at the top of the watersheds for Drainages L and D. Based on the Wetland Assessment prepared for the project site, these drainages include characteristics of ACOE jurisdictional “other waters” and project activities would indirectly impact the drainage by increasing sediment loading during construction. Section 5.a.(1) includes mitigation measures to address these impacts.

(b) Roads

Phase One of the proposed project includes construction of two main roads (Main Road 1 and 2) and eight access roads (Roads A, G, H, I, J, K, L, and M). Construction of these roads and associated CAL FIRE fuel reduction zones would impact approximately: 19.46 acres of annual

and perennial grassland; 30.22 acres of agricultural land; 0.57 acre of riparian scrub; 0.21 acre of riparian forest; 0.31 acre of freshwater marsh; and, 0.39 acre of coast live oak woodland. In addition, many of the roads will cross or travel along jurisdictional waters of the U.S. As proposed, the utilities associated with the project would be installed within the proposed road beds; consequently, impacts that are associated with utility installation are included in the following roads discussion. The following section discusses the impacts and mitigation measures associated with the road segments.

Main Roads 1 and 2: Impacts to Waters of the U.S.

As proposed, the alignment of Main Road 1 requires the construction of road crossings at Drainage G (Crossing G.1) and at Drainage E (Crossing E.2) (refer to Figure V.C.-2). In addition, an approximately 2,400-foot section of Main Road 1 would travel along the western bank of Drainage E. The alignment of Main Road 2 requires the installation of road crossings at Drainages C (Crossing C.1), Drainage D (Crossing D.1), and Drainage E (Crossing E.3) (refer to Figure V.C.-2). Construction of Main Roads 1 and 2 would result in fill and discharge in waters of the U.S, these activities would require authorization by CDFG, RWQCB, and ACOE. Section 5.a.(1) includes mitigation measures to address these impacts.

Main Roads 1 and 2: Impacts to Natural Plant Communities and Special-status Species

The proposed alignment of Main Roads 1 and 2 would traverse several natural plant communities and aquatic areas that may harbor special-status species including California red-legged frog. Special-status species in the area would be impacted by road construction. In addition, a portion of Main Road 1 would require removing an existing pond that supports pond turtles; and, impact two coast live oak trees (refer to Table V.B-5). Section 5.a.(1) includes mitigation measures to address these impacts.

Access Roads: Impacts to Natural Plant Communities and Waters of the U.S. and State

Construction of Phase One includes the development of eight secondary roads that will access the residential developments. Access Roads A, G, H, I, and M are located in existing vineyards and would not impact sensitive biological resources. However, Access Roads J, K, and L would impact approximately: 3.6 acres of grasslands, 0.39 acre of oak woodland with a coastal scrub understory; 0.09 acre of riparian scrub; and, 0.42 acres of agricultural land. These natural plant communities may harbor special-status species that would be disturbed by construction activities. Construction of Access Road J would disturb four coast live oak trees. Access Road L is located directly adjacent to a drainage that is a tributary to Drainage E, construction of Access Road L would result in dredge or fill of water of the U.S. Section 5.a.(1) includes mitigation measures to address these impacts.

(c) Water Infrastructure

As proposed, the project includes the installation of a 268,500-gallon water storage tank immediately northeast of proposed Lot 101, at the terminus of proposed Access Road F (refer to Figure V.C.-1.2). The location of Access Road F and the water tank are located in an area that potentially supports special-status species that would be impacted by project activities.

Two additional wells are proposed to be drilled to serve the vineyard and winery. These new wells would be located on the east side of Highway 101, within the western portion of the project site, in agriculture land. Due to the historic land uses in the proposed location of the new wells, biological impacts associated with the well installation are not anticipated.

Wells 14 and 15 (which would be used for domestic water supply in lieu of Wells 12 and 13) are located in the northeastern portion of the project site, and associated infrastructure includes existing pipelines that were installed within rough-graded agricultural roads. Use of these wells for the project would require replacement of the water lines. The location of the water lines would be within an existing road, which traverses oak woodland roughly parallel to Drainage B. Use of equipment for trenching, removal of the existing pipe, and installation of the new water line would not directly affect sensitive habitats; however, protection measures are necessary to ensure avoidance of significant impacts to individual oak trees, oak woodland, riparian and wetland habitat within Drainage B, water quality, and special status species, including nesting birds. Implementation of previously identified mitigation measures would be required to ensure the protection and restoration of these resources (refer to BIO/mm-1 through BIO/mm-19, and WAT/mm-9 and WAT/mm-11 through WAT/mm-13).

All other water pipelines and force mains associated with the proposed water infrastructure would be installed within existing and proposed roadways; consequently, impacts associated with the waterlines and force mains are discussed in the roads section above.

Proposed Water Tank: Impacts to Special-status Species

As proposed, an access road located off Access Road F would be improved to provide access to the new water tank. The new water tank and access roads would be installed in an area that supports 2.79 acres of grasslands and 0.66 acre of coastal scrub plant communities. These plant communities potentially support special-status species including protected plants and nesting birds that would be directly impacted by the development. Final improvements to Access Road F are proposed to be included in Phase Three of the project; however, initial disturbances and biological impacts associated with Road F and the water tank access road would take place in Phase One during installation of the new water tank. Section 5.a.(1) includes mitigation measures to address these impacts.

(d) Wastewater Treatment and Disposal

The applicant proposes to manage wastewater by constructing a sewage collection system that includes the following elements: 1) a 10,000-square foot building shell, which would house a 5,000-square foot domestic wastewater treatment facility and a 5,000-square foot winery wastewater treatment facility; 2) six storage tanks for domestic sewage, which would be located within a 4,000-square foot underground structure adjacent to the 10,000-square foot building shell; 3) a domestic sewage collection system consisting of pipes, force mains, and lift stations; 4) two ponds to store treated domestic wastewater and one pond to store treated winery wastewater; and, 5) a 20.8-acre disposal area for treated domestic wastewater (refer to Figures V.C.-1.1 through V.C.-1.3)

Impacts associated with the wastewater treatment facility, 20.8-acre disposal site, and the wastewater storage reservoirs are discussed below. The proposed sewage collection system including the pipes and force mains would be located within the road beds of proposed and existing roads. Impacts associated with the sewage collection system are discussed in Section 5.b.1(b) Roads.

Wastewater Treatment Facility: Impacts to Nesting Birds

The proposed 10,000-square foot wastewater treatment facility and 4,000-square foot underground storage structures would be located in an area that is heavily disturbed by existing agricultural uses including storage and parking. As a result of these activities the immediate area is not suitable for special status-species or plant communities. However, a small grove of adult eucalyptus trees is directly adjacent to the proposed site. The eucalyptus trees provide valuable nesting habitat for a variety of bird species. Project activities would generate noise that would disturb the nesting behavior of birds within the eucalyptus grove. Section 5.a.(1) includes mitigation measures to address these impacts.

Removal of Existing Reservoir: Impacts to Special-status Species

The proposed project includes removing an existing water storage reservoir that is located between proposed Main Road 1 and Lots 1 through 3. This reservoir provides habitat for aquatic species including California red-legged frog, southwestern pond turtle, and two-striped garter snake. During the 2007 survey, a pond turtle was observed basking on an irrigation line in the reservoir. Removal of the reservoir would directly impact the pond turtle habitat and potentially result in take of the observed individual and any other aquatic species that may be present within the reservoir. Section V.C.5.a.(1) includes mitigation measures to address these impacts (refer to BIO/mm-17 and BIO/mm-19). As discussed below, three water storage reservoirs would be constructed onsite, which could potentially serve a similar habitat function as the existing agricultural reservoir to be removed. In addition, the applicant is required to implement a Habitat Revegetation and Restoration Plan to mitigate for the loss of riparian and wetland habitat (refer to BIO/mm-6), which would create or improve habitat conditions for special-status species.

Construction and Use of Waste Water Storage Reservoirs: Indirect Impacts to Waters of the U.S. and Special-Status Species

The proposed project includes constructing three reservoirs that would be used for storing recycled wastewater. The proposed locations for the three reservoirs are within existing agricultural areas; consequently, impacts to special-status species are not expected during construction of the reservoirs. However, the three reservoirs are located directly adjacent to waters of the U.S. and construction activities would result in indirect impacts to the jurisdictional waters. Indirect impacts include a temporary increase of sediment loading into the drainages, during construction. Section V.C.5.a.(1) includes mitigation measures to address impacts related to construction (refer to BIO/mm-2, BIO/mm-4, and BIO/mm-9 through BIO/mm-12).

Following tertiary treatment at the wastewater treatment plant, the effluent would be piped into reservoirs for storage prior to irrigation. As discussed in Section V.L. Wastewater, there is a potential for accidental spill, mechanical failure, or other unforeseen event that could cause

release of raw sewage (from collection pipes) or improperly treated effluent into surface waters. In addition to measures proposed by the applicant (i.e., alarms, emergency generators, contained treatment plant) and compliance with existing regulations, mitigation is identified (refer to WW/mm-1), requiring an emergency contingency plan to avoid accidental discharge into surface waters. Implementation of these measures would minimize the likelihood of accidental harm to special-status species potentially within and down-gradient of the reservoirs.

20.8-acre Disposal Site: Indirect Impacts to Waters of the U.S and Special-Status Species

The proposed treated effluent disposal site is located between Los Berros Creek and Drainage K; and, approximately 500 feet upslope of these jurisdictional features. The topography of the proposed effluent disposal site is gently sloping towards Drainage K, which is a tributary to Los Berros Creek. As discussed in above, there is a potential for mechanical failure or other unforeseen events that could cause improperly treated effluent to be piped into storage ponds and then applied to the disposal area. In addition to compliance with existing regulations, mitigation is identified (refer to WW/mm-1), requiring an emergency contingency plan to avoid accidental discharge into surface waters. Implementation of these measures would minimize the likelihood of accidental harm to special-status species within and down-gradient of the disposal area.

2) Ranch Headquarters

The proposed ranch headquarters would be located on approximately 1.4 acres within proposed Open Space Lot 44, and would include a private recreation facility, community center, and homeowner's association building (refer to Figures III-13 and III-14). Additional facilities would include the main entry gate and an 150-square foot guard station, 250-square foot mail gazebo, 29 parking spaces, patio areas, exterior lighting, lawn, meadow grass and landscaping, and two overflow parking areas (one un-improved, the second improved with decomposed granite or gravel). The site is directly adjacent to Upper Los Berros Creek Road and Los Berros Creek in an area that has been disturbed by agricultural practices.

(a) Structural improvements

The proposed structural improvements that are associated with the ranch headquarters include the homeowner's association facility, clubhouse, recreation center, mail center, and entry gates. Grading activities associated with the construction of these structures would remove approximately .61 acre of grassland, landscape and riparian trees, and several existing agricultural structures. The annual grassland in this area has been significantly disturbed by agricultural practices including cattle staging and mowing; consequently, it is unlikely that special-status plant species exist in this area. However the trees and riparian corridor within the vicinity do provide valuable nesting habitat for bird species and foraging/shelter habitat for other wildlife species. In addition, construction activities and future uses of the site would result in indirect impacts to Los Berros Creek, which is designated critical habitat for south central steelhead trout.

Ranch Headquarters: Impacts to Nesting Birds

Numerous mature riparian and landscape trees are located within the immediate vicinity of the proposed ranch headquarters site. These trees function as an extension of the Los Berros Creek

riparian corridor, and provide valuable nesting habitat for various bird species. Project activities such as grading and building would disturb the nesting behavior of birds in the area. Section 5.a.(1) includes mitigation measures to address these impacts.

Ranch Headquarters: Impacts to Oak and Riparian Trees

As discussed above numerous mature riparian trees are located within the vicinity of the proposed ranch headquarters site. Several of these trees are native coast live oak and sycamore trees which are an extension of the adjacent Los Berros Creek riparian corridor. Project activities including grading, drainage improvements, and fuel reduction management would impact these trees. Section 5.a.(1) includes mitigation measures to address these impacts.

Ranch Headquarters: Indirect Impacts to Waters of the U.S.

The project site is located directly adjacent to Los Berros Creek and project activities would result in indirect impacts to the creek. Indirect impacts would include sedimentation, increased stormwater runoff, and water pollution. These impacts would result from an increase in impervious layers associated with the internal roads and parking, and increased traffic. Use, maintenance, or staging of construction equipment in areas adjacent to drainages could also increase the risk of fuel spills or leaks into sensitive habitats during construction. Section 5.a.(1) includes mitigation measures to address these impacts.

3) Equestrian Facility

The applicant requested removal of the equestrian facility from the list of proposed uses; therefore, the analysis of this use has been deleted from the EIR.

c. Phase Two

Phase two of the proposed development includes construction of 40 residential lots (Residential Sub-clusters C and D) and five access roads. These project elements would be located throughout the project site in various habitats. Project related activities including grading, building, and future uses would impact natural plant communities, coast live oak trees, aquatic areas, agricultural areas, and waters of the U.S. These impacts would occur during the construction of the access roads and residential sub-clusters.

1) Residential Development

(a) Lot development

Development of Residential Sub-cluster C (Lots 46-65) would directly impact 1.96 acres of grassland, and 3.93 acres of coast live oak woodland (refer to Table V.C.-5). Impacts to these habitats would be a result of the lot grading, building, and vegetation removal that would occur in the vicinity of the residential structures for fuel reduction. In addition, indirect impacts to waters of the U.S. would occur as a result of construction of Residential Sub-cluster C. Residential Sub-cluster D is located in areas that have been subject to agricultural disturbance; and, development of these areas would not result in significant biological impacts.

Residential Sub-cluster C: Impacts to Special-status Species

As proposed, Residential Sub-cluster C would be located in an area that maintains coast live oak woodland with an annual grass and remnant coastal scrub understory. Numerous large sandstone rock outcrops are also located within the proposed development site. These communities and rock outcrops provide valuable nesting and foraging habitat for various bird species and other wildlife. In addition, special-status plant species could occupy this area. Project activities including grading and building would directly and indirectly impact special-status species and nesting birds that may be in the area. Section 5.a.(1) includes mitigation measures to address these impacts.

Residential Sub-cluster C: Indirect impacts to Waters of the U.S.

As proposed, Residential Sub-cluster C is located at the top of the watershed for Drainage I. Drainage I maintains characteristics of ACOE "other waters" (refer to Figure V.C.-2) and project activities would indirectly impact the drainage by increasing sediment loading during construction. Section 5.a.(1) includes mitigation measures to address these impacts.

(b) Roads

Construction of Phase Two includes the development of five access roads (Roads B, C, D, P, and N) that would traverse a variety of natural plant communities and jurisdictional waters. Access roads B and C are located in existing vineyards; consequently, development of these roads would not result in significant biological impacts. Proposed Access Road N is the existing main entrance for the winery operations. Improvements to the existing road are not expected to cause significant biological impacts. Access Roads D and P would be located in coast live oak woodland and waters of the U.S. Construction of Roads D and P would disturb 0.44 acre of coast live oak woodland and directly impact waters of the U.S.

Access Roads: Impacts to Natural Plant Communities and Oak Woodland

Access Roads D and P are located within oak woodland that may harbor special-status species and nesting birds. Construction in these areas would disturb oak trees (refer to Table V.C.-5) and any special-status species that may be in the area. In addition construction activities could disturb nesting birds within the oak woodland areas. Section 5.a.(1) includes mitigation measures to address these impacts.

Access Roads: Impacts to Waters of the U.S.

Construction of Access Road D would require installation of a culvert within Drainage I. Drainage I maintains characteristics of ACOE "other waters." Construction activities would result in direct and indirect impacts to the drainage including dredge and fill. Section 5.a.(1) includes mitigation measures to address these impacts.

d. Phase Three

Phase three of the proposed development includes the construction of 19 residential lots (Residential Sub-cluster E) and Access Roads E and F (refer to Figure V.C.-2). These elements are located in annual grassland and coastal scrub communities and adjacent to Drainage E.

1) Residential Development

Phase Three of the proposed residential development project has potential to impact waters of the U.S., annual grassland, and coastal scrub habitat. These impacts would occur during the construction of the access roads, residential sub-clusters, replacement vineyards, and fuel reduction. The following sections discuss these impacts and the associated mitigation measures.

(a) Lot development

As proposed, phase three of the development includes the construction of Residential Sub-cluster E, which consists of 19 residential lots. Lots 87 through 91 are located within existing vineyards; whereas, Lots 92 through 101 would be located within natural plant communities. Development of Lots 87 through 91 is not expected to result in significant biological impacts; however, Lots 92 through 101 would result in impacts to special-status species and waters of the U.S.

Residential Sub-cluster E Lots 92 through 101: Impacts to Special-status Species

Lots 92 through 101 would impact 8.04 acres of grassland, and 0.17 acre of coastal scrub communities. These communities could support special-status species, and provide foraging and cover habitat for numerous wildlife species. Project activities including grading and building could impact special-status species that may be in the area. Section 5.a.(1) includes mitigation measures to address these impacts.

Residential Sub-cluster E: Indirect Impacts to Waters of the U.S.

As proposed, Residential Sub-clusters E is located at the top of the watershed for Drainages E and a tributary to Drainage E. These drainages maintain characteristics of ACOE jurisdictional other waters and project activities would indirectly impact the drainages by increasing sediment loading during construction. Section 5.a.(1) includes mitigation measures to address these impacts.

(b) Roads

Phase Three of the development includes the construction of two access roads and a driveway. Access Road E would service Lots 87 through 91 and would be located in existing vineyards. Construction of Access Road E is not anticipated to result in any biological impacts. Access Road F would service Lots 99 through 101 and the proposed water tank. Construction of Access Road F would result in impacts to grassland and coastal scrub communities. Impacts associated with Access Road F are addressed in section 5.b.1(c) Water Infrastructure. The proposed driveway for Lot 92 would require installation of a culvert within the OHWM of the tributary to Drainage E (refer to Crossing E.4, Figure V.C.-2).

Lot 92 Driveway: Direct Impacts to Waters of the U.S.

As proposed, Lot 92 would be situated between Drainage E and a tributary to Drainage E. The driveway that would access Lot 92 would cross the tributary and would require installation of a

culvert. Installation of the culvert would result in fill and discharge into waters of the U.S. Section 5.a.(1) includes mitigation measures to address these impacts.

e. Future Development

The applicant proposes to construct a dude ranch within proposed Open Space Lot 106. The applicant is not currently requesting a land use permit for the proposed dude ranch, and has not submitted grading or development plans. For the purpose of this EIR, the dude ranch is assessed as a future development proposal, based on project details provided by the applicant and assumptions based on a reasonable worst-case scenario (i.e., building size and height, site disturbance, etc.).

1) Dude Ranch

The proposed location of the dude ranch is Open Space Lot 106, which is approximately 388.5 acres in size, in the far northeast corner of the project site (refer to Figures III-4 and III-12). The dude ranch would include a 75-unit lodging facility, guest service and spa facility, eating facility, classrooms, outdoor fire pit, barbeque, and utilities. Structural elements of the dude ranch would cover up to 7.7 acres. The remaining approximately 380 acres would be utilized for open space and trails. The dude ranch would be accessed via Access Roads I and L, which connect to Main Road 1 and Main Road 2. A secondary access road to the dude ranch would be located approximately 3,000 feet east of the main entrance gate (refer to Figures III-12 and III-17).

(a) Impacts to Waters of the U.S.

Construction of the proposed access road for the dude ranch would require crossing Drainages A and B, likely resulting in the installation of two culverts within these drainages. These drainage features maintain characteristics of ACOE “other waters” and the applicant must receive authorization from ACOE and CDFG prior to implementing any road improvements. Implementation of these improvements would contribute to direct and indirect impacts to waters of the U.S. (refer to BIO Impact 1 and BIO Impact 2).

(b) Impacts to Oak Woodland

Construction of the 7.7-acre dude ranch has the potential to impact approximately 1.3 acres of oak woodland. Impacts would occur as a result of removal or other disturbance of trees during construction and subsequent vegetation management associated with the dude ranch improvements. In addition, the future trail system and recreational uses in the undeveloped portion of proposed lot 106 would impact an unknown amount of oak woodland. Impact estimates associated with the trail system can not be adequately estimated due to the lack of proposed plans. Implementation of the proposed dude ranch would contribute to significant and unavoidable impacts to oak woodland habitat (refer to BIO Impact 3).

(c) Potential Impacts to Special-status Species and Other Wildlife

The proposed dude ranch is located in an area that supports relatively undisturbed annual grassland, perennial grassland, coastal scrub, and oak woodland communities. These communities may support special-status plant or animal species, especially within the northern portions of the proposed Open Space Lot 106. This area would be utilized for recreational

activities including horseback riding, hiking, and other trail based activities. These activities tend to cause limited disturbance; however, initial construction of the trail system would result in direct impacts to special-status species. In addition, construction and future uses of the dude ranch structural elements would directly impact the natural communities mentioned above and any special-status species that may exist there, including nesting birds (refer to BIO Impact 4 and BIO Impact 5). Such impacts would result from the initial construction of the structures and future vegetation management for fire protection buffers.

BIO Impact 10 **Construction and future uses of the dude ranch would directly impact natural communities that may support special-status species.**

BIO/mm-21 Prior to issuance of permits, the applicant shall retain a qualified biologist to conduct botanical surveys of all areas proposed for structural or trail improvements. The botanical surveys shall be conducted in accordance with the *California Department of Fish and Game Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities.*

BIO/mm-22 If special-status plant species or sensitive habitats are identified during the botanical surveys, the applicant shall show on the project plans that all improvements would avoid the rare plant occurrences. If avoidance is not feasible, the applicant shall receive authorization from the appropriate agencies to impact the individuals observed; and, in coordination with the agency prepare any required mitigation plans.

Residual Impact With implementation of the above mitigation measures, direct and indirect impacts to sensitive species and other wildlife would be considered *less than significant with mitigation, Class II*.

6. Cumulative Impacts

The proposed project is located at the upper reach of Los Berros Creek, which is a tributary to Arroyo Grande Creek. These two creeks are designated steelhead critical habitat and currently support steelhead populations. In addition, the watersheds of these creeks support a mosaic of vegetative communities that support various plant and wildlife species. Some of these species are considered rare and afforded protection by regulatory agencies.

Due to the size and complexity of the watersheds and the habitats they support, the cumulative development scenario for the proposed project includes the south county area. Human disturbances within the Los Berros Creek and Arroyo Grande Creek watersheds started with agricultural development, which initiated the growing problem of habitat fragmentation and decreasing water quality within the creeks. Over the years, the agricultural development within the watersheds has been replaced with residential and commercial development. The residential and commercial development has greatly increased the amount of impervious surfaces in the watershed, requiring the need to concentrate stormwater flows and direct them into the creeks. In order to accommodate the increased flows, Arroyo Grande Creek and its tributaries have been channelized and redirected. The increasing conversion of agricultural land and natural plant

communities to residential and commercial development seen in the south county area has exacerbated the problem of habitat fragmentation and decreased water quality within the areas creeks. The proposed project includes converting approximately 150 acres of agricultural land and natural plant communities to impervious surfaces. As discussed in Section V.B. (Water Resources), mitigation is recommended to mitigate potential water supply and water quality impacts to less than significant at a project-specific level. With the implementation of recommended mitigation measures, the project's incremental contribution to this cumulative impact would be significant but mitigable.

As discussed throughout this section, construction of the proposed project would result in impacts to and permanent loss of riparian scrub, freshwater marsh, annual and perennial grasslands, coastal scrub, coast live oak woodland, and aquatic areas. These habitats provide potential foraging and nesting habitat for sensitive wildlife species, and sensitive plant species. Implementation of project-specific mitigation, including an Oak Tree Inventory, Avoidance, and Protection Plan, Oak Tree Replacement, Monitoring, and Conservation Plan, and protection and restoration of riparian habitats would offset the project's effect on natural habitats; however, the creation of a residential community and associated uses, and increased human population would result in the long-term unavoidable loss, degradation, and fragmentation of natural habitats on the project site. The applicant proposes to place lot 106 under an open space easement. Restricting destructive activities and implementing restoration projects within the easement would offset the effect of the proposed project.

Cumulative impacts result from incremental actions that are collectively significant to a resource. Implementation of the proposed project would result in incremental habitat loss and fragmentation of the Los Berros Creek corridor and associated upland oak woodland, grassland, and scrub habitats. Recently approved projects and projects currently under consideration by the county and city of Arroyo Grande are primarily located outside of the Upper Los Berros Creek corridor. Other developments in the south county area are generally within urban areas, agricultural areas, eucalyptus groves, and coastal dune scrub habitats. While the proposed project would result in project-specific significant and unavoidable impacts to biological resources, the cumulative impact is considered significant but mitigable as defined by CEQA, because development with the Los Berros Creek corridor is limited, and implementation of recently approved, and potential projects would not result in impacts to similar habitat types.

BIO Impact 11 **The project would contribute to the permanent loss and fragmentation of native plant communities that support special-status species, resulting in a significant cumulative impact.**

BIO/mm-23 Prior to approval of subdivision public improvement plans or grading permit issuance, the proposed open space easement for lot 106 shall include language prohibiting any future residential or commercial use of the areas that are outside of the proposed 7.7-acre dude ranch area. The easement shall include strict limitations on the development of recreational trails (e.g., width, location, slope), and the development of a habitat restoration plan that focuses on rehabilitating the oak woodland, coastal scrub, and perennial bunch grass communities within the open

space area. The easement shall protect the natural plant communities within the open space area in perpetuity.

Residual Impact Implementation of the project would contribute to incremental habitat loss and adverse effects to special-status species. Mitigation is recommended to minimize these effects, including avoidance where feasible, restoration and creation of affected habitats, protection of water quality, and monitoring and reporting to ensure compliance with recommended measures. Based on implementation of these measures, the project's residual cumulative effects to biological resources are considered *significant but mitigable, Class II*.

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