

Section 4.9 Hydrology and Water Quality

4.9.1 INTRODUCTION

This section provides information regarding potential hydrology, drainage, and water quality impacts resulting from general implementation of the Project. Information for this section was taken from the 2003 *Riverside County General Plan* (GPA No. 618), *General Plan EIR No. 441* (2003), *EMWD Wine Country Infrastructure Study* (2011), the *Memorandum: Wine Country Storm Water Findings – Community Plan/EIR 524* (July 13, 2011), prepared by RBF Consulting, the *Southwest Area Plan*, proposed Temecula Valley Wine Country Policy Area (2011), Wine Country zones of Ordinance No. 348, and the *Temecula Valley Wine Country Design Guidelines*.

4.9.2 EXISTING CONDITIONS

The Project area is made up of approximately 18,990 partially developed acres of rural residential, equestrian, and agricultural uses. It sits to the east of the City of Temecula, south of Lake Skinner and generally west of DePortola Road. From north to south it extends from Tualota Creek to Highway 79 and includes a small area to the south of Highway 79. Uses within the Project area include 40 operating wineries (39 located within the proposed Winery District and one located within the proposed Residential District), numerous rural residential parcels and equestrian facilities.

Drainage within the Project Area generally occurs from east to west. The entire area ultimately drains to the Santa Margarita River and ultimately the Pacific Ocean. The entire area is within the Santa Margarita Watershed and within the jurisdiction of the San Diego Regional Water Quality Control Board with respect to water quality.

REGIONAL HYDROLOGY AND DRAINAGE

The existing terrain is generally made up of rolling hills throughout with the exception of the Equestrian District, which is relatively flat and largely within a Federal Emergency Management Agency (FEMA) 100-year floodplain, which ultimately drains to Temecula Creek. Multiple natural and man-made basins, reservoirs and natural channels make up the stormwater conveyance systems throughout the Project area..

The Project area includes three land use Districts, as shown in Exhibit 3.0-5, *Wine Country Community Plan with Districts*, which are further broken down for hydrologic reference in this section as follows:

- District 1 - Northerly Residential District
- District 2 - Northerly Winery District
- District 3 - Southerly Residential District
- District 4 - Equestrian District
- District 5 - Southerly Winery District

The project site is made up of six general drainage areas, as depicted in Exhibit 4.9-1, *Watershed Boundary Map*, and Exhibit 4.9-2, *Drainage Course Photo Map*.

Drainage Area 1: The northern portion of District 1 and a small piece at the north end of District 2 drains to Tualota Creek, which ultimately drains into Lake Skinner.

Drainage Area 2: The southern portion of District 1 and majority of District 2 and a small northerly portion of District 3 drain in a westerly direction into a series of natural channels, which tie into either the westerly leg of Tualota Creek, or Santa Gertrudis Creek. These flows ultimately drain to Murrieta Creek.

Drainage Area 3: The southwesterly corner of District 2 and northwesterly corner of District 3 drains to the west and gets picked up in a series of storm drain culverts, which ultimately drain to Long Canyon Wash. Long Canyon Wash ultimately drains to Murrieta Creek.

Drainage Area 4: The westerly portion of District 3 drains westerly to the Crowne Hill Wash, which is located approximately 3,500 feet to the east of Butterfield Stage Road south of Pauba Road. These flows are ultimately picked up in a large storm drain system in DePortola Road, which outlets into Temecula Creek.

Drainage Area 5: The remaining southeasterly portion of District 3 drains westerly to Anza Road. These flows are then conveyed in a natural channel that parallels the west edge of Anza Road. The remaining southerly portion of District 2 drains to DePortola Road. These flows travel along DePortola and empty out in District 4. Both of these flows confluence with the flows across District 4, which all drain westerly and eventually end up in Temecula Creek.

Drainage Area 6: District 5 drains northerly to Temecula Creek.

A portion of the Project area, approximately the north half, is within the Murrieta Creek watershed, as shown on Exhibit 4.9-1, *Watershed Boundary Map*, provided by Riverside County Flood Control and Water Conservation District (RCFCWCD). As shown on this Exhibit, District 1, a majority of District 2 and the northerly most portion of District 3 fall within this area. The southerly portion of District 3, the southeasterly corner of District 2, District 4, and District 5 fall outside the limits of the Murrieta Creek watershed. All implementing projects that fall within the Murrieta Creek Area Drainage Plan will be subject to ADP fees, as enforced by RCFCWCD. Refer to Exhibit 4.9-2, *Drainage Course Photo Map*, for a detailed view of the Project drainage.

A large portion of the Equestrian District is within a FEMA 100-year Floodplain. The limits of each floodplain type (Zone A, AE, AH, and X [shaded]) are shown on Exhibit 4.9-3, *Floodplain Areas*. Zone A designated floodplains are areas with a one-percent annual chance of flooding. Because detailed analyses are not performed by FEMA for such areas; no depths or base flood elevations are shown within these zones. Zone AE designates areas subject to inundation by the one-percent annual chance flood event determined by detailed methods. BFEs are shown in this zone. Zone AH designates areas subject to inundation by one-percent annual chance shallow flooding (usually areas of ponding) where average depths are between one and three feet. BFEs derived from detailed hydraulic analyses are shown in this zone. Zone X (shaded) floodplains are areas of moderate flood hazard, usually areas between the limits of the 100-year (1-percent annual probability) and 500-year (0.2-percent annual probability) floods. Any project that requires fill to be placed within this area, which alters the limits of the floodplain will be required to process a Letter of Map Revision based on Fill (LOMR-F) with FEMA.

URBAN RUNOFF CHARACTERISTICS

The most common categories of stormwater pollutants are described below. Receiving waters can assimilate some quantity of various runoff constituents. However, there are thresholds beyond which the measured constituent becomes a pollutant and results in an undesirable impact.

Sediment

Sediment is made up of tiny soil particles that are washed or blown into surface waters. It is typically the major pollutant by volume in surface water. Suspended soil particles can cause the water to look cloudy (be turbid). The fine sediment particles also act as a vehicle to transport other pollutants, including nutrients, trace metals, and hydrocarbons. Construction sites are the largest source of sediment for urban areas under development; another major source is stream bank erosion, which may be accelerated by increases in peak flow rates and volumes of runoff due to urbanization.

Nutrients

Nutrients are a major concern for surface water quality, especially phosphorous and nitrogen, which can cause algal blooms and excessive vegetative growth. Of the two, phosphorus is usually the limiting nutrient that controls the growth of algae in lakes or other nonmoving water bodies. The orthophosphorous form of phosphorus is a readily available nutrient for plant growth.

The ammonium form of nitrogen can also have severe effects on surface water quality. The ammonium is converted to nitrate and nitrite forms of nitrogen in a process called nitrification. This process consumes large amounts of oxygen, which can impair the dissolved oxygen levels in water. The nitrate form of nitrogen is very soluble and is found naturally at low levels in water. When nitrogen fertilizer is applied to lawns or other areas in excess of plant needs, nitrates can leach below the root zone, eventually reaching groundwater. Orthophosphate from automobile emissions also contributes phosphorus in areas with heavy automobile traffic.

Generally, nutrient export is greatest from development sites with large impervious areas. Other problems resulting from excess nutrients are surface algal scums, water discolorations, odors, toxic releases, and overgrowth of plants. Common measures of nutrients are total nitrogen, organic nitrogen, total Kjeldahl nitrogen (TKN), nitrate, ammonia, total phosphate, and total organic carbon (TOC).

Trace Metals

Trace metals are primarily of concern because of their toxic effects on aquatic life and their potential to contaminate drinking water supplies. A shorter duration of exposure to a trace metal reduces its toxicity in the aquatic environment. The toxicity of trace metals in runoff also varies with the hardness of the receiving water. As total hardness of the water increases, so does the potential for adverse effects. Metals commonly found in urban runoff are lead, zinc, and copper. Automobile emissions are also a major source of lead in urban areas. A large fraction of the trace metals in urban runoff is attached to sediment. Sediment effectively reduces the level of trace metals that is immediately available for biological uptake and subsequent bioaccumulation (metals attached to sediment settle out rapidly and accumulate in the soils). Also, urban runoff events typically have a short duration, which reduces the amount of exposure and its toxicity in the aquatic environment.

Oxygen-Demanding Substances

Aquatic life is dependent on the dissolved oxygen (DO) in water. When microorganisms consume organic matter, DO is consumed in the process. A rainfall event can deposit large quantities of oxygen-demanding substances in lakes and streams. The biochemical oxygen demand (BOD) of typical urban runoff is on the same order of magnitude as the effluent from an effective secondary wastewater treatment plant. A problem from low DO can result when the rate of oxygen-demanding material exceeds the rate of oxygen replenishment. Oxygen demand is estimated by direct measure of DO and indirect measures such as BOD, chemical oxygen demand (COD), oils and greases, and TOC.

Bacteria

Bacteria levels in undiluted urban runoff exceed public health standards for water contact recreation, almost without exception. Studies have found that total coliform bacteria counts exceed U.S. Environmental Protection Agency (EPA) water quality criteria at almost every site examined and almost every time it has rained. The coliform bacteria that are detected may not be a health risk in themselves, but are often associated with human pathogens.

Oil and Grease

Oil and grease contain a wide variety of hydrocarbons, some of which could be toxic to aquatic life in low concentrations. These materials initially float on water and create the familiar rainbow-colored film. Hydrocarbons have a strong affinity for sediment and quickly become absorbed in it. The major source of hydrocarbons in urban runoff is through leakage of crankcase oil and other lubricating agents from automobiles onto impervious surfaces. Hydrocarbon levels are highest in the runoff from parking lots, roads, and service stations. Residential land uses generate less hydrocarbons export, although illegal disposal of waste oil into stormwater can be a local problem.

Other Toxic Chemicals

Priority pollutants are generally related to hazardous wastes or toxic chemicals and are occasionally detected in urban runoff. Priority pollutant scans, which evaluated the presence of over 120 toxic chemicals and compounds, have been conducted in previous studies of urban runoff. The scans rarely revealed toxins that exceed the current safety criteria. The urban runoff scans were primarily conducted in suburban areas not expected to have many sources of toxic pollutants (with the possible exception of illegally disposed or applied household hazardous wastes). Measures of priority pollutants in stormwater include phthalate (plasticizer compound), phenols and creosols (wood preservatives), pesticides and herbicides, oils and greases, and metals.

Standard parameters are used to assess the quality of stormwater and provide a method of measuring stormwater impairment. Knowing these typical characteristics assists in understanding water quality requirements. The quantity of a material in the environment and its characteristics determine the degree of availability as a pollutant in surface runoff. In an urbanized area, the quantity of certain pollutants in the environment is a function of the intensity of the land use. For instance, a high density of automobile traffic makes a variety of potential pollutants (such as lead and hydrocarbons) more available. The availability of a material, such as a fertilizer, is a function of the quantity and the manner in which it is applied. Applying fertilizer in quantities that exceed plant needs leaves the excess nutrients available for loss to surface water or groundwater.

Monitoring and Evaluating Water Quality

The physical properties and chemical constituents of water have served traditionally as the primary measures for monitoring and evaluating water quality. Evaluating the condition of water via a water quality standard means evaluating its physical, chemical, and/or biological characteristics. Water quality parameters for stormwater comprise a long list and are classified in many ways. In many cases, the concentration of an urban pollutant, rather than the annual load of that pollutant, is needed to assess a water quality problem. Some of the physical, chemical or biological characteristics that evaluate the quality of the surface runoff are discussed in the following text.

Dissolved Oxygen

Dissolved oxygen in the water has a pronounced effect on the aquatic organisms and the chemical reactions that occur. It is one of the most important biological water quality characteristics in the aquatic environment. The dissolved oxygen concentration of a water body is determined by the solubility of oxygen, which is inversely related to water temperature, pressure, and biological activity. Dissolved oxygen is a transient property that can fluctuate rapidly in time and space; it represents the status of the water system at a particular place and time of sampling. The decomposition of organic debris in water is a slow process and the resulting changes in oxygen status also respond slowly. The oxygen demand is an indication of the pollutant load and includes measurements of BOD or COD.

Biochemical Oxygen Demand (BOD)

The biochemical oxygen demand (BOD) is an index of the oxygen-demanding properties of the biodegradable material in the water. Samples are taken from the field and incubated in the laboratory at 20° Centigrade (C), after which the residual dissolved oxygen is measured. The BOD value commonly referenced is the standard 5-day value. These values are useful in assessing stream pollution loads and for comparison purposes.

Chemical Oxygen Demand (COD)

The chemical oxygen demand (COD) is a measure of the pollutant loading in terms of complete chemical oxidation using strong oxidizing agents. It can be determined quickly because it does not rely on bacteriological actions as with BOD. COD does not necessarily provide a good index of oxygen-demanding properties in natural waters.

Total Dissolved Solids (TDS)

TDS concentration is determined by evaporation of a filtered sample to obtain residue whose weight is divided by the sample volume. The TDS of natural waters varies widely. TDS is an important indicator of water quality for several reasons. Dissolved solids affect the ionic bonding strength related to other pollutants in the water, such as metals. TDS is also a major determinant of aquatic habitat. TDS affects saturation concentration of dissolved oxygen and influences the ability of a water body to assimilate wastes. Eutrophication rates depend on TDS.

pH

The pH of water is the negative log, base 10, of the hydrogen ion (H⁺) activity. A pH of 7 is neutral; a pH greater than 7 indicates alkaline water; a pH less than 7 represents acidic water. In natural water, carbon dioxide reactions are some of the most important in establishing pH. The pH at any one (1) time is an indication of the balance of chemical equilibrium in water and affects the availability of certain chemicals or nutrients in water for uptake by plants. The pH of water directly affects fish and other aquatic life; generally, toxic limits are pH values that are less than 4.8 and greater than 9.2.

Alkalinity

Alkalinity is the opposite of acidity, representing the capacity of water to neutralize acid. Alkalinity is also linked to pH and is caused by the presence of carbonate, bicarbonate, and hydroxide, which are formed when carbon dioxide is dissolved. A high alkalinity is associated with a high pH and excessive solids. Most streams have alkalinities less than 200 mg/L and ranges of alkalinity of 100-200mg/L seem to support well-diversified aquatic life.

Specific Conductance

The specific conductivity of water (its ability to conduct an electric current) is related to the total dissolved ionic solids. Long-term monitoring of project waters can develop a relationship between specific conductivity and TDS. Measurement is quick and inexpensive, and can be used to approximate TDS. Specific conductivities in excess of 2,000 microohms per centimeter ($\mu\text{ohms/cm}$) indicate a TDS level too high for most freshwater fish.

Turbidity

The clarity of water (the ability of photosynthetic light to penetrate it) is an important indicator of water quality. Turbidity is an indicator of the property of water that causes light to become scattered or absorbed, and can be used as an indicator of certain water quality constituents such as predicting the sediment concentrations. Suspended clays and other organic particles increase turbidity.

Nitrogen (N)

The sources of nitrogen in a water body are from the additions of organic matter and chemicals found in stormwater. Ammonia and nitrate are important nutrients for the growth of algae and other plants. Excessive nitrogen can lead to eutrophication because nitrification consumes DO in the water. Nitrogen occurs in many forms. Organic nitrogen breaks down into ammonia, which eventually becomes oxidized to nitrate-nitrogen, a form available for plants. High concentrations of nitrate-nitrogen (N/N) in water can stimulate growth of algae and other aquatic plants, but if phosphorus (P) is present, only about 0.30 mg/L of nitrate-nitrogen is needed for algal blooms. Some fish life can be affected when N/N exceeds 4.2 mg/L. There are a number of ways to measure the various forms of aquatic nitrogen. Typical measurements of nitrogen are Kjeldahl nitrogen (organic nitrogen plus ammonia); ammonia; nitrite plus nitrate; nitrite; and nitrogen in plants. The principal water quality criteria for nitrogen focus on nitrate and ammonia.

Phosphorus (P)

Phosphorus is an important component of organic matter. In many water bodies, phosphorus is the limiting nutrient that prevents additional biological activity from occurring. The origin of this constituent in urban stormwater discharge is generally fertilizers and other industrial products. Orthophosphate is soluble and is considered to be the only biologically available form of phosphorus. Because phosphorus strongly associates with solid particles and is a significant part of organic material, sediments influence concentration in water and are an important component of the phosphorus cycle in streams. The primary methods of measurement are detecting orthophosphate and total phosphorus.

WATER QUALITY

Some of the impairments listed with the receiving waters include nitrogen, phosphorus, total dissolved solids and eutrophication. Pollutants of concern that may potentially exist in run-off from typical rural development include sediment/turbidity, nutrients, organic compounds, trash and debris, oxygen demanding substances, pathogens (bacteria and viruses), oil, grease, pesticides and metals.

Water Infiltration Capacity

Natural Resources Conservation Service (NRCS) provides general soils information, as shown on the Exhibit 4.6-6, *Wine Country NRCS Soils Mapping*, which can be useful for estimating the potential for infiltration. The exhibit has been provided as a planning tool for identifying the areas within the Temecula Valley Wine Country Policy Area that have soil types that are capable of disposal of wastewater by rapid infiltration. All other areas on the exhibit not identified as having either “somewhat limited” or “not limited” infiltration capacity are soil types (as classified by the NRCS) with more limited capacity for rapid infiltration. These maps are not intended to be used for design, or to determine whether infiltration is feasible for any given site. Based on the information mapped by NRCS a majority of the plan area is considered to have “very limited” infiltration, meaning a reduced capability of allowing for rapid wastewater infiltration. In addition, some areas have soils that are considered to be somewhat limited or not limited to rapid wastewater infiltration as depicted in Exhibit 4.6-6, *Wine Country NRCS Soils Mapping*.

GROUNDWATER STORAGE CAPACITY AND QUALITY

The Project area is located over the Temecula Valley Groundwater Basin which underlies several valleys in southwestern Riverside County and a portion of northern San Diego County. The Temecula Valley Groundwater Basin has a groundwater storage capacity of 253,000 af but the current amount of groundwater available is unknown. The California Department of Water Resources (DWR) Groundwater Bulletin 118 (2004)¹ characterizes the groundwater in this basin is largely sodium bicarbonate in character. Sodium-calcium bicarbonate, sodium-calcium sulfate, calcium bicarbonate, and sodium chloride waters also are present in the basin. Total Dissolved Solids (TDS) concentration ranged from 220 to 984 mg/L in 1956; however, water from 50 public supply wells ranges from 240 to 1,500 mg/L, and averages 476 mg/L. Groundwater in this basin is largely suitable for domestic and irrigation uses.

4.9.3 REGULATORY FRAMEWORK

EXISTING STATE AND FEDERAL REGULATIONS

National Flood Insurance Program (NFIP)

The Federal Emergency Management Agency (FEMA) - a former independent agency that became part of the new Department of Homeland Security in March 2003 - is tasked with responding to, planning for, recovering from and mitigating against disasters. Formed in 1979 to merge many of the separate disaster-related responsibilities of the Federal government into one (1) agency, FEMA is responsible for coordinating the Federal response to floods, earthquakes, hurricanes, and other natural or man-made disasters and providing disaster assistance to States, communities and individuals. The Federal Insurance and Mitigation Administration (FIMA) within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that provide assistance for mitigating future damages from natural hazards. Established in 1968 with the passage of the National Flood Insurance Act, the NFIP is a Federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the Federal Government. If a community adopts and enforces a

¹ http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/9-5.pdf.

floodplain management ordinance to reduce future flood risk to new construction in floodplains, the Federal Government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods.

Clean Water Act

In 1972, the Federal Water Pollution Control Act (later referred to as the Clean Water Act) was amended to require National Pollutant Discharge Elimination System (NPDES) permits for the discharge of pollutants to waters of the United States from any point source. In 1987, the Clean Water Act was amended to require that the United States Environmental Protection Agency (EPA) establish regulations for the permitting of municipal and industrial stormwater discharges under the NPDES permit program. The Environmental Protection Agency published final regulations regarding stormwater discharges on November 16, 1990. The regulations require that municipal separate storm sewer system (MS4) discharges to surface waters to be regulated by a NPDES permit.

In addition, the Clean Water Act requires states to adopt water quality standards for receiving water bodies and to have those standards approved by the Environmental Protection Agency. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing etc.), along with water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations or levels of constituents (e.g., lead, suspended sediment, and fecal coliform bacteria) or narrative statements which represent the quality of water that support a particular use. Because California had not established a complete list of acceptable water quality criteria, the Environmental Protection Agency established numeric water quality criteria for certain toxic constituents in receiving waters with human health or aquatic life designated uses in the form of the California Toxics Rule (CTR) (40 CFR 131.38).

Clean Water Act Section 303(d) – Total Maximum Daily Loads

When designated beneficial uses of a particular receiving water body are being compromised by water quality, Section 303(d) of the Clean Water Act requires identifying and listing that water body as “impaired.” Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for the impairing pollutant(s). A TMDL is an estimate of the total load of pollutants from point, non-point, and natural sources that a water body may receive without exceeding applicable water quality standards (with a “factor of safety” included). Once established, the TMDL allocates the loads among current and future pollutant sources to the water body.

California Toxics Rule

The California Toxics Rule (CTR) is a Federal regulation issued by the Environmental Protection Agency providing water quality criteria for potentially toxic constituents in receiving waters with human health or aquatic life designated uses in the State of California. CTR criteria are applicable to the receiving water body and therefore must be calculated based upon the probable hardness values of the receiving waters for evaluation of acute (and chronic) toxicity criteria. At higher hardness values for the receiving water, copper, lead, and zinc are more likely to be complexed (bound with) components in the water column. This in turn reduces the bioavailability and resulting potential toxicity of these metals.

Due to the intermittent nature of stormwater runoff, especially in Southern California, the acute criteria are considered to be more applicable to stormwater conditions than chronic criteria and therefore are used in assessing impacts. Acute criteria represent the highest concentration of a pollutant to which

aquatic life can be exposed for a short period of time without deleterious effects; chronic criteria equal the highest concentration to which aquatic life can be exposed for an extended period of time (four (4) days) without deleterious effects.

Clean Water Act Section 401 – Water Quality Certification

In addition to the issuance of NPDES permits or waste discharge requirements, the Regional Water Quality Control Board (RWQCB) acts to protect the quality of surface waters through water quality certification as specified in Section 401 of the Clean Water Act (33 USC 466 et seq.) Section 401 of the Clean Water Act requires that any person applying for a Federal permit or license which may result in a discharge of pollutants into waters of the United States must obtain a state water quality certification that the activity complies with all applicable water quality standards, limitations, and restrictions. Subject to certain limitations, no license or permit may be issued by a Federal agency until certification required by Section 401 has been granted. Further, no license or permit may be issued if certification has been denied. Clean Water Act Section 404 permits and authorizations are subject to Section 401 certification by the RWQCBs.

California Water Code

The Federal Clean Water Act places the primary responsibility for the control of surface water pollution and for planning the development and use of water resources with the states, although this does establish certain guidelines for the States to follow in developing their programs and allows the Environmental Protection Agency to withdraw control from states with inadequate implementation mechanisms.

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

Regional Water Quality Control Board Permitting Programs

The Regional Water Quality Control Board (RWQCB) develops regulations and enforces state policies which protect state waters. In regard to the Project area, the RWQCB is responsible for developing and revising the regional basin plan, implementing the National Pollutant Discharge Elimination System (NPDES) program, permitting waste discharges to state waters, and enforcing waste discharge cleanups. The Comprehensive Water Quality Control Plan Report for the Lahontan Basin identifies beneficial uses, establishes water quality objectives, and outlines a program for implementing the plan.

All wastewater discharges in the region, whether to surface or groundwater, are subject to Waste Discharge Requirements (WDRs); all reuses of treated wastewaters are subject to Water Reclamation Requirements (WRRs). In addition, the United States Environmental Protection Act (USEPA) has delegated responsibility for water quality to the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) for implementation of the Federal NPDES program. Therefore, WDRs for discharges to surface waters also serve as NPDES permits. These combined programs are the legal means to regulate controllable discharges of water. It is illegal to discharge any wastes into any waters of the State or to reuse treated wastewaters without obtaining appropriate WDRs, WRRs, or NPDES permits. These permits hereinafter are referred to as “Requirements.”

Any facility or person who discharges, or proposes to discharge, wastes or makes a material change to the character, location, or volume of waste discharges to waters in the Lahontan Basin Region (other than into a community sewer system) must describe the quantity and nature of the proposed discharge in a Report of Waste Discharge (ROWD) or an NPDES application. Upon review of the ROWD or NPDES application and all other pertinent information (including comments received at a public hearing), the regional board will consider the issuance of Requirements that incorporate appropriate measures and limitations to protect public health and water quality. The basic components of the Requirements are:

Discharge limitations (including, if required, effluent and receiving water limits):

- Standard requirements and provisions outlining the discharger’s general discharge requirements and monitoring and reporting responsibilities; and
- A monitoring program in which the discharger is required to collect and analyze samples and submit monitoring reports to the regional board on a prescribed schedule.

Discharges are categorized according to their threat to water quality and their operational complexity. In addition, discharges to surface waters are categorized as major or minor discharges. Filing and annual fees are based on these categories. WDRs or WRRs usually do not have an expiration date but are reviewed periodically on a schedule based on the level of threat to water quality. NPDES permits are adopted for a five-year period.

Most requirements are tailored to specific waste discharges. In some cases, however, discharges can be regulated under general requirements, which simplify the permit process for certain types of discharges. These general requirements are issued administratively to the discharger after a completed ROWD or NPDES application has been filed and the Executive Officer of the RWQCD has determined that the discharge meets the conditions specified in the general Requirements. Point-source discharges include wastewaters from new residential development, industrial and manufacturing facilities, construction sites, and power generation stations.

Municipal Separate Storm Sewer Systems (MS4s)

On November 10, 2010 the San Diego Regional Water Quality Control Board (RWQCB) adopted updated waste discharge requirements for discharges from the Municipal Separate Storm Sewer Systems (MS4s) within the San Diego Region. All new projects within the Project area must adhere to the current MS4 permit requirements, as the entire area ultimately drains to the Santa Margarita River, which is within the jurisdiction of the San Diego Regional Water Quality Control Board. Although a Water Quality Management Plan (WQMP) may not be required for each project, the Best Management Practices (BMP’s) required to meet the current MS4 permit requirements shall be implemented.

National Pollutant Discharge Elimination System (NPDES)

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The RWQCB issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the Environmental Protection Agency Regional Administrator (EPA Region 5). The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti-degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the CWC.

Stormwater Program

The 1987 Clean Water Act amendments required the EPA to establish regulations to control stormwater discharges associated with industrial activity, and discharges from large and medium municipal separate storm sewer systems. Large municipal separate storm sewer systems serve a population of 250,000 or more and medium municipal storm sewer systems serve a population of more than 100,000 but less than 250,000. On November 16, 1990, the EPA published the final regulations that established the NPDES permit requirements for discharges of stormwater from large and medium municipal separate storm sewer systems and stormwater discharges associated with industrial activities. The stormwater NPDES permitting program is administered by the SWRCB and RWQCBs.

EXISTING COUNTY REGULATIONS

Ordinance No. 458: Flood Hazards

As part of the County's participation in the NFIP, the intent of this ordinance is to protect the public health, safety, and welfare and minimize public and private costs caused by flooding by regulating development within flood hazard areas. Flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. It is intended that the requirements of this ordinance will be integrated into the processing of applications for development permits under other County ordinances including, but not limited to, Ordinance Nos. 348, 369, 457, 460, 555, and 659.

EXISTING COUNTY GENERAL PLAN POLICIES

Multipurpose Open Space (OS) Element Policies

Policy OS 1.1 Balance consideration of water supply requirements between urban, agricultural, and environmental needs so that sufficient supply is available to meet each of these different demands. (AI 3)

Policy OS 1.2 Develop a repository for the collection of County water resource information. (AI 11, 55)

- Policy OS 1.3 Provide active leadership in the regional coordination of water resource management and sustainability efforts affecting Riverside County and continue to monitor and participate in, as appropriate, regional activities, addressing water resources, groundwater, and water quality, such as a Groundwater Management Plan, to prevent overdraft caused by population growth. (AI 4, 55, 58)
- Policy OS 2.1 Encourage the installation of water-conserving systems such as dry wells and graywater systems, where feasible, especially in new developments. The installation of cisterns or infiltrators shall also be encouraged to capture rainwater from roofs for irrigation in the dry season and flood control during heavy storms. (AI 57, 62)
- Policy OS 2.2 Where feasible, decrease stormwater runoff by reducing pavement in development areas, and by design practices such as permeable parking bays and porous parking lots with bermed storage areas for rainwater detention. (AI 57, 62)
- Policy OS 2.3 Encourage native, drought-resistant landscape planting. (AI 3, 57, 62)
- Policy OS 2.4 Support and engage in educational outreach programs with other agencies that promote water conservation and wide-spread use of water-saving technologies. (AI 58)
- Policy OS 2.5 Encourage continued agricultural water conservation and recommend the following practices where appropriate and feasible: lining canals, recovering tail water at the end of irrigated fields, and appropriate scheduling of water deliveries. (AI 57)
- Policy OS 3.1 Encourage innovative and creative techniques for wastewater treatment, including the use of local water treatment plants.
- Policy OS 3.2 Encourage wastewater treatment innovations in rural areas.
- Policy OS 3.3: Minimize pollutant discharge into storm drainage systems and natural drainage and aquifers. (AI 3)
- Policy OS 4.1 Support efforts to create additional water storage where needed, in cooperation with federal, state, and local water authorities. Additionally, support and/or engage in water banking in conjunction with these agencies where appropriate, as needed. (AI 56, 57)
- Policy OS 4.2 Participate in the development, implementation, and maintenance of a program to recharge the aquifers underlying the County. The program shall make use of flood and other waters to offset existing and future groundwater pumping, except where:
- groundwater quality would be reduced;
 - available groundwater aquifers are full; or
 - rising water tables threaten the stability of existing structures. (AI 56, 57)
- Policy OS 4.3 Ensure that adequate aquifer water recharge areas are preserved and protected. (AI 3, 56, 57)
- Policy OS 4.4 Incorporate natural drainage systems into developments where appropriate and feasible. (AI 3)

- Policy OS 4.5 Retain storm water at or near the site of generation for percolation into the groundwater to conserve it for future uses and to mitigate adjacent flooding. (AI 57)
- Policy OS 4.6 Use natural approaches to managing streams, to the maximum extent possible, where groundwater recharge is likely to occur. (AI 57)
- Policy OS 4.7 Offer incentives to landowners whose property is prohibited from development due to its retention as a natural ground water recharge area. These incentives shall be provided to encourage the preservation of natural water courses without creating undue hardship on the owner of properties, and might include density transfer mechanisms. (AI 9)
- Policy OS 5.1 Substantially alter floodways or implement other channelization only as a "last resort," and limit the alteration to:
- that necessary for the protection of public health and safety only after all other options are exhausted;
 - essential public service projects where no other feasible construction method or alternative project location exists; or
 - projects where the primary function is improvement of fish and wildlife habitat. (AI 25, 59, 60)
- Policy OS 5.2 If substantial modification to a floodway is proposed, design it to reduce adverse environmental effects to the maximum extent feasible, considering the following factors:
- stream scour;
 - erosion protection and sedimentation;
 - wildlife habitat and linkages;
 - groundwater recharge capability;
 - adjacent property; and
 - design (a natural effect, examples could include soft riparian bottoms and gentle bank slopes, wide and shallow floodways, minimization of visible use of concrete, and landscaping with native plants to the maximum extent possible).
 - A site specific hydrologic study may be required. (AI 25, 59, 60)
- Policy OS 5.3 Based upon site, specific study, all development shall be set back from the floodway boundary a distance adequate to address the following issues:
- public safety;
 - erosion;
 - riparian or wetland buffer;
 - wildlife movement corridor or linkage; and
 - slopes. (AI 59, 60)
- Policy OS 5.4 Consider designating floodway setbacks for greenways, trails, and recreation opportunities on a case-by-case basis. (AI 25, 59, 60)

- Policy OS 5.5 New development shall preserve and enhance existing native riparian habitat and prevent obstruction of natural watercourses. Incentives shall be utilized to the maximum extent possible. (AI 25, 60)
- Policy OS 5.7 Where land is prohibited from development due to its retention as natural floodways, floodplains and water courses, incentives should be available to the owner of the land including density transfer and other mechanisms as may be adopted. These incentives will be provided for the purpose of encouraging the preservation of natural water courses without creating undue hardship on the owner of properties following these policies. (AI 60)
- Policy OS 6.3 Consider wetlands for use as natural water treatment areas that will result in improvement of water quality. (AI 56)

Safety (S) Element Policies

- Policy S 4.1 For new construction and proposals for substantial improvements to residential and nonresidential development within 100-year floodplains as mapped by FEMA or as determined by site specific hydrologic studies for areas not mapped by FEMA, the County shall apply a minimum level of acceptable risk; and disapprove projects that cannot mitigate the hazard to the satisfaction of the Building Official or other responsible agency. (AI 25)
- Policy S 4.2 Enforce provisions of the Building Code in conjunction with the following guidelines: (AI 25)
- All residential, commercial and industrial structures shall be flood-proofed from the 100-year storm flow, and the finished floor elevation shall be constructed at such a height as to meet this requirement. Critical facilities should be constructed above grade to the satisfaction of the Building Official, based on federal, state, or other reliable hydrologic studies.
 - Critical facilities shall not be permitted in floodplains unless the project design ensures that there are two routes for emergency egress and regress, and minimizes the potential for debris or flooding to block emergency routes, either through the construction of dikes, bridges, or large-diameter storm drains under roads used for primary access.
 - Development using, storing, or otherwise involved with substantial quantities of onsite hazardous materials shall not be permitted, unless all standards for evaluation, anchoring, and flood-proofing have been satisfied; and hazardous materials are stored in watertight containers, not capable of floating, to the extent required by state and federal laws and regulations.
 - Specific flood-proofing measures may require: use of paints, membranes, or mortar to reduce water seepage through walls; installation of water tight doors, bulkheads, and shutters; installation of flood water pumps in structures; and proper modification and protection of all electrical equipment, circuits, and appliances so that the risk of electrocution or fire is eliminated. However, fully enclosed areas that are below finished floors shall require openings to equalize the forces on both sides of the walls.

- Policy S 4.3 Prohibit construction of permanent structures for human housing or employment to the extent necessary to convey floodwaters without property damage or risk to public safety. Agricultural, recreational, or other low intensity uses are allowable if flood control and groundwater recharge functions are maintained. (AI 25)
- Policy S 4.4 Prohibit alteration of floodways and channelization unless alternative methods of flood control are not technically feasible or unless alternative methods are utilized to the maximum extent practicable. The intent is to balance the need for protection with prudent land use solutions, recreation needs, and habitat requirements, and as applicable to provide incentives for natural watercourse preservation, including density transfer programs as may be adopted. (AI 25, 60)
- a. Prohibit the construction, location, or substantial improvement of structures in areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.
 - b. Prohibit the filling or grading of land for nonagricultural purposes and for non-authorized flood control purposes in areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.
- Policy S 4.5 Prohibit substantial modification to water courses, unless modification does not increase erosion or adjacent sedimentation, or increase water velocities, so as to be detrimental to adjacent property, nor adversely affect adjacent wetlands or riparian habitat. (AI 60, 61)
- Policy S 4.6 Direct flood control improvement measures toward the protection of existing and planned development. (AI 25)
- Policy S 4.7 Any substantial modification to a watercourse shall be done in the least environmentally damaging manner possible in order to maintain adequate wildlife corridors and linkages and maximize groundwater recharge. (AI 25, 60)
- Policy S 4.8 Allow development within the floodway fringe, if the proposed structures can be adequately flood-proofed and will not contribute to property damage or risks to public safety. (AI 25, 60)
- Policy S 4.9 Within the floodway fringe of a floodplain as mapped by FEMA or as determined by site specific hydrologic studies for areas not mapped by FEMA, require development to be capable of withstanding flooding and to minimize use of fill. However, some development may be compatible within flood plains and floodways, as may some other land uses. In such cases, flood proofing would not be required. Compatible uses shall not, however, obstruct flows or adversely affect upstream or downstream properties with increased velocities, erosion backwater effects, or concentrations of flows. (AI 60)

- Policy S 4.10 Require all proposed projects anywhere in the County to address and mitigate any adverse impacts that it may have on the carrying capacity of local and regional storm drain systems.
- Policy S 4.19 Require that the design and upgrade of street storm drains be based on the depth of inundation, relative risk to public health and safety, the potential for hindrance of emergency access and regress from excessive flood depth, and the threat of contamination of the storm drain system with sewage effluent. In general, the 10-year flood flows shall be contained within the top of curbs and the 100-year flood flows within the street right-of-way.
- Policy S 4.20 Balance flood control mitigation with open space and environmental protection. (AI 59, 61)

Southwest Area Plan

Local Open Space Policies

- SWAP 21.1 Protect the Santa Margarita watershed and habitat, and provide recreational opportunities and flood protection through adherence to the Watershed Management section of the General Plan Multipurpose Open Space Element, as well as use of Best Management Practice policies.

Local Hazard Policies

- SWAP 24.1 Protect life and property from the hazards of potential dam failures and flood events through adherence to the Flood and Inundation Hazards section of the General Plan Safety Element.
- SWAP 24.2 Reduce flooding damage through adherence to design and density standards contained in the Master Drainage Plan for Murrieta Creek Area and the Murrieta Creek Drainage Plan.
- SWAP 24.3 Adhere to the flood proofing, flood protection requirements, and flood management review requirements of Riverside County Ordinance No. 458 regulating flood hazards.
- SWAP 24.4 Require proposed development projects that are subject to flood hazards, surface ponding, high erosion potential or sheet flow to be submitted to the Riverside County Flood Control and Water Conservation District for review.

4.9.4 SIGNIFICANCE THRESHOLD CRITERIA

The environmental analysis in this section relative to hydrology and water quality is patterned after the Initial Study Checklist recommended by the CEQA Guideline Appendix G (2011), as amended, and used by the County of Riverside in its environmental review process. The issues presented in Appendix G have been utilized as thresholds of significance in this section. Accordingly, a project may create significant hydrology and water quality impacts if it causes one or more of the following to occur:

- a) Violate any water quality standards or waste discharge requirements;

- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted);
- c) Substantially alter the existing drainage pattern of the Site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or offsite;
- d) Substantially alter the existing drainage pattern of the Site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite;
- e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- f) Otherwise substantially degrade water quality;
- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- h) Place structures within a 100-year flood hazard area that would impede or redirect flood flows;
- i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam (dam inundation area); or
- j) Be inundated by seiche, tsunami, or mudflow.

4.9.5 IMPACT ANALYSIS AND MITIGATION

IMPACT METHODOLOGY

This section analyzes potential hydrology and water quality impacts as a result of the Project. Mitigation measures are included, as needed, to avoid or lessen potentially significant impacts. The Project itself would not directly result in any specific development project. The Project proposes a general plan amendment, zone ordinance amendment, and design guidelines within a portion of the Southwest Area Plan. This change in land use policy and guidance is intended to promote the expansion and co-existence of winery, residential, and equestrian uses within this part of the County. As a result, an evaluation was performed to determine if any of the proposed changes would have the potential to significantly adversely affect the hydrology or water quality within the Project area.

For each topic below, programmatic, construction, operational, and infrastructure improvement-related impacts associated with the Project have been identified and analyzed. When considering the significance of an individual impact, the EIR considers the existing local, State and Federal regulations, laws and policies in effect, including applicable County General Plan policies. In addition, the impact analysis considers the Project Design Features that have been incorporated into the Project to avoid, reduce or offset potential impacts. In cases where existing regulations and policies and Project Design Features may not adequately reduce Project impacts, the County has proposed additional mitigation measures in EIR No. 441 to reduce, avoid or offset Project-related impacts. These mitigation measures will be incorporated into the Project Mitigation Monitoring and Reporting Program, which will be adopted as part of the Project approval process.

PROJECT DESIGN FEATURES

The following Project Design Features are incorporated into the Project to avoid, reduce or offset potential significant environmental impacts, as reflected in the Project proposal materials, including the proposed General Plan Amendment, Zoning Ordinance Amendment, and Temecula Valley Wine Country Design Guidelines:

- 1) The Project includes requirements to limit the intensity and density of implementing projects, including retention of at least 75% of all winery project acreage as agricultural production, and requiring minimum lot sizes in the Winery, Winery-Existing, and Equestrian Districts, thereby reducing impervious surfaces and associated stormwater runoff.

IMPACT ANALYSIS AND MITIGATION MEASURES

Impact 4.9-1: Water Quality Standards

Threshold: *Would the project violate any water quality standards or waste discharge requirements?*

Determination: *Less than Significant with Mitigation*

Wine Country Community Plan Overview of Programmatic Impacts

The Project involves a General Plan Amendment, Zoning Ordinance Amendment, Design Guidelines, updated circulation plan, and updated trails plan within a portion of the Southwest Area Plan that would guide the development of residential, equestrian, and winery uses within this portion of Riverside County. Development of implementing projects would cause an increase in impervious surfaces; however, compliance with federal, State, and local requirements on a project-by-project basis and by minimizing the amount of grading and utilizing existing drainage patterns projects should be able to minimize their effect on downstream water courses, as well as their impacts on water quality.

Implementing projects must comply with the requirements of the Riverside County MS4 Permit and NPDES General Permit for Stormwater Discharges Associated with Construction Activity. The MS4 Permit requires the development and implementation of a Water Quality Management Plan. The NPDES General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which must include a visual monitoring program, a chemical monitoring program for “non-visible” pollutants to be implementing if there is a failure of BMPs, and erosion and sediment control BMPs that would meet or exceed measures required by the General Construction Permit, as well as BMPs that control hydrocarbons, trash and debris, as well as other potential construction-related pollutants. A SWPPP would be developed as required by, and in compliance with, the General Construction Permit and the County of Riverside requirements. Erosion control BMPs are designed to prevent erosion, whereas sediment controls are designed to trap sediment once it has been mobilized.

Implementation of BMPs would prevent or minimize environmental impacts and ensure that discharges during the construction phase would not cause or contribute to any exceedance of water quality standards in the receiving waters. BMPs to be included in this menu may include among others: soil binders, earth dikes and drainage swales, silt fence, sediment basin/trap, gravel bag berms, street sweeping and vacuuming, sand bag/straw bale barriers, vehicle and equipment cleaning, stabilized construction entrance, spill prevention and control, solid waste management, hazardous waste

management, concrete waste management, catch basin inserts, good housekeeping practices, and sanitary septic water management. Preparation and approval of a project-specific SWPPP is included as mitigation to address construction-related water quality impacts. Implementation of these BMPs, as required by the General Permit as part of the project-specific SWPPP, would reduce impacts to a less than significant level.

In addition, with the requirement to protect water quality and in the absence of existing assimilative capacity for TDS in the groundwater basin, mitigation will be required to offset the salinity issues in the basin. With implementation of the mitigation below, less than significant impacts to groundwater quality are anticipated.

Construction-related Impacts (of Implementing Projects)

Implementing projects allowed pursuant to the Project are expected to occur over a 25-year period. Temporary construction related impacts are anticipated to involve grading to construct buildings, access roads, signage, lighting, landscaping, onsite utilities, trails and necessary infrastructure improvements to support implementing projects. The potential for water quality impacts would be significant during the earthwork and construction phase, when the potential for erosion, siltation, and sedimentation would be the greatest and following construction, but prior to the establishment of any ground cover, when erosion potential may remain relatively high.

Operational Impacts (of Implementing Projects)

The Project will support new and existing rural residential, winery, and equestrian uses, as well as other commercial activities that encourage tourism. The goal of the Project is to expand development opportunities and attract tourists to the area. The operation of wineries, equestrian uses, and an increase in residential development would generate additional wastewater which would require treatment. Table 4.9-1 lists a number of potential surface and groundwater impacts which could result from agricultural and equestrian uses.

Table 4.9-1
Agricultural and Equestrian Impacts on Water Quality

Activity	Impacts	
	Surface water	Groundwater
Tillage/ploughing	Sediment/turbidity: sediments carry phosphorus and pesticides adsorbed to sediment particles; siltation of river beds and loss of habitat, spawning ground, etc.	
Fertilizing	Runoff of nutrients, especially phosphorus, leading to eutrophication causing taste and odor in public water supply, excess algae growth leading to deoxygenation of water and fish kills.	Leaching of nitrate to groundwater; excessive levels are a threat to public health.
Manure spreading	Carried out as a fertilizer activity; spreading on frozen ground results in high levels of contamination of receiving waters by pathogens, metals, phosphorus and nitrogen leading to eutrophication and potential contamination.	Contamination of ground-water, especially by nitrogen
Pesticides	Runoff of pesticides leads to contamination of surface water and biota; dysfunction of ecological system in surface waters by	Some pesticides may leach into



4.9 Hydrology and Water Quality

Activity	Impacts	
	Surface water	Groundwater
	loss of top predators due to growth inhibition and reproductive failure; public health impacts from eating contaminated fish. Pesticides are carried as dust by wind over very long distances and contaminate aquatic systems 1000s of miles away (e.g. tropical/subtropical pesticides found in Arctic mammals).	groundwater causing human health problems from contaminated wells.
Animal / Horse corrals	Contamination of surface water with many pathogens (bacteria, viruses, etc.) leading to chronic public health problems. Also contamination by metals contained in urine and feces.	Potential leaching of nitrogen, metals, etc. to groundwater.
Irrigation	Runoff of salts leading to salinization of surface waters; runoff of fertilizers and pesticides to surface waters with ecological damage, bioaccumulation in edible fish species, etc. High levels of trace elements such as selenium can occur with serious ecological damage and potential human health impacts.	Enrichment of groundwater with salts, nutrients (especially nitrate).
Source: Food and Agriculture Organization of the United Nations, <i>Control of Water Pollution from Agriculture</i> , dated 1996, http://www.fao.org/docrep/w2598e/w2598e04.htm#aagricultural_impacts_on_water_quality , accessed September 8, 2011.		

Surface water quality issues common to residential development include increase runoff, which collects pollutants before reaching surface streams. Homeowners may also use excessive fertilizer and pesticide on lawns and gardens. Low-density residential development could also result in groundwater quality concerns regarding pathogenic microorganisms or nitrates as a result of private onsite wastewater systems (which San Diego RWQCB may allow in some instances based on site-by-site soil percolation characteristics).² However, as discussed in Impact Statement 4.13-7, implementation of the Project would require for individual projects which exceed the RWQCB Waiver Limit to extend sewer infrastructure with transport of wastewater to the local treatment facility.

Infrastructure Impacts (of Implementing Projects)

Most infrastructure including sewer lines, domestic water transmission lines, and dry utilities will be placed underground within existing or proposed roadway right-of-ways. In addition, infrastructure improvements (pump stations, water tanks, roundabouts, etc.) are anticipated to be constructed within the Project area where deemed necessary. Infrastructure construction and maintenance impacts would be similar to those discussed under construction impacts; activities such as site grading, trenching and construction work would leave large areas of bare soil and could increase sedimentation in surface waters.

Summary of Applicable Existing Regulations and Policies

- a) Section 401 of the Clean Water Act requires discharges to obtain a state water quality certification.
- b) Section 404 of the Clean Water Act regulates discharges into Waters of the US.
- c) A SWPPP is required for projects disturbing more than one acre of land. The SWPPP will specify BMPs to prevent all construction pollutants from contacting storm water and with the intent of keeping all products of erosion from moving offsite into receiving waters.

² Environmental Protection Agency, "Land Use Impacts on Water", updated May 23, 2011, <http://www.epa.gov/greenkit/toolwg.htm>, accessed September 8, 2011.

- d) A NPDES permit, regulating the discharge of pollutants from a point source is required for projects over five acres.

Mitigation Measures

Refer to Mitigation Measures LU-1 in Section 4.10, *Land Use and Relevant Planning*, and PSU SEWER 1 through 2 in Section 4.13, *Public Service, Recreation and Utilities*.

HYD-1 All implementing projects shall utilize the County's Water Quality Management Plan (WQMP) checklist to determine if a project-specific WQMP is required. All implementing projects, regardless of the need for a WQMP, shall incorporate the appropriate Best Management Practices (BMPs) to maintain conformance to the County's active MS4 permit.

Depending upon the location of the implementing project and whether it is considered a "Significant Redevelopment" or "New Development", the County shall require the project proponent to submit the necessary additional information and condition those project accordingly.

HYD-2 All implementing projects exceeding a discharge of average aggregate wastewater flow that exceeds the San Diego Regional Water Quality Control Board (SDRWQCB) threshold shall be required to connect to sewer services when it is made available by the Eastern Municipal Water District (EMWD). Most single-family residences may be exempted from average aggregate wastewater flow requirements regardless of family units.

HYD-3 Prior to issuance of grading permits, implementing projects shall prepare the necessary Stormwater Pollution Prevention Program (SWPPP) and comply with the National Pollutant Discharge Elimination System (NPDES) General Construction Storm Water Permit from the State Water Resources Control Board.

HYD-4 Infiltration may be utilized by implementing projects for maintaining water quality standards. However, any implementing projects proposing onsite stormwater runoff infiltration shall conduct individual percolation tests, prepared by a soils engineer, to determine the feasibility of using infiltration onsite, as well as to provide design recommendations for the chosen BMP's. If infiltration is not feasible based on a specific site's soils properties, some form of on-site detention should be considered to mitigate any additional stormwater runoff that exceeds the existing calculated flows. In this case other BMP's should be evaluated to meet the water quality requirements for the project. Maintaining the use of existing roadside swales in compliance with the current MS4 permit is also recommended to help maintain existing drainage patterns and help with water quality.

HYD-5 All implementing projects shall include measures designed to increase infiltration and reduce impacts to water quality within the upper aquifer. Depending upon project location, the applicable measures shall include the following:

- Require that all wastewater discharges conform to the Regional Water Quality Control Board Basin Plan groundwater quality objectives.
- Requires the use of cisterns and infiltrators to capture and reuse rainwater as a water conserving system (Riverside County Policy OS 2.1).
- Require the use of natural drainage systems, permeable parking bays and porous parking lots to provide rainwater detention (Riverside County Policy OS 2.2 and 4.4).

- Require that adequate aquifer water recharge areas are preserved and protected and that rainwater is used to recharge the aquifers (Riverside County Policy OS 4.2 and 4.3).
- Restrict pollutant discharge into the drainage systems and aquifer (Riverside County Policy OS 3.3).
- Prohibit the use of fertilizing, manure spreading, pesticide application, and runoff from animal/horse corrals within all drainage courses, especially Temecula Creek.

Conclusion

Adherence to the existing federal and state regulations in addition to the project design features and mitigations measures HYD-1 through HYD-5 would ensure that any impacts to water quality would remain less than significant.

Impact 4.9-2: Groundwater Supplies

Threshold: *Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?*

Determination: *Less than Significant with Mitigation*

Wine Country Community Plan Overview of Programmatic Impacts

The proposed Project would guide the rural development of the Project area. Implementing projects would cause an increase in impervious surfaces; however, by minimizing the amount of grading and utilizing existing drainage patterns projects should be able to minimize their effect on runoff, as well as their impacts on local groundwater recharge. Much of the land within the Project is vacant or consisting of rural uses that permit water infiltration (such as agricultural and equestrian uses).

Proposed land uses within the Project area have the potential to increase use of groundwater and cause changes in absorption rates. In particular, by accommodating implementing projects, the growth within the Project area will increase water consumption that could potentially lead to a new deficit in aquifer volume or a lowering of the local groundwater table level. Rancho California Water District (RCWD) provides water service for the Cities of Temecula and Murrieta and a portion of the County of Riverside. Supply to RCWD's water system comes from imported surface water, local groundwater, and recycled water supply. Local groundwater is drawn from RCWD-owned wells. The RCWD *Integrated Regional Water Management Plan (IRWMP) 2010*, states that the watershed currently faces significant water supply issues and challenges that are common throughout southern California, including rapid population and water demand growth; significant reliance on imported water supply; and water quality issues arising from excessive inputs of nutrients from a variety of sources including agriculture, nursery operations, municipal wastewater discharges, urban runoff, septic systems, and golf course operations. Other serious water quality and environmental concerns in the watershed include excessive sedimentation from agricultural areas, groundwater degradation and contamination with nitrates and other salts, habitat loss, flooding, and scour.

However, the RCWD 2010 Urban Water Management Plan (UWMP) anticipates cumulative growth within its service area based on development pursuant to the 2003 Riverside County General Plan and the adopted General Plans of the other municipalities it serves. In normal, single dry and multiple dry

years, RCWD states that its water supply would exceed projected demands by a comfortable margin of 20 percent or more. Because the Project would generate less residents and commercial uses, as described throughout Section 4.13, *Public Services & Utilities*, the growth generated by the Project would not result in a significant impact on groundwater supply.

Construction-related Impacts (of Implementing Projects)

Implementing projects allowed pursuant to the Project are expected to occur over a 25-year period. Temporary construction related impacts are anticipated to involve grading to construct buildings, access roads, signage, lighting, landscaping, onsite utilities, trails and necessary infrastructure improvements to support implementing projects. Relatively minor dewatering may be needed for construction near areas of high groundwater, such as along active stream courses, which will require separate permitting through the RWQCB, and other regulatory agencies as appropriate. The construction phase of the proposed is not anticipated to have a significant impact on groundwater supplies.

Operational Impacts (of Implementing Projects)

The Project will support new and existing rural residential, winery, and equestrian uses, as well as other commercial activities that encourage tourism. The goal of the Project is to expand development opportunities and attract tourists to the area. The operation and maintenance of the equestrian and agricultural uses in addition to an increase in residential development could have the potential to deplete groundwater supplies. In order to ensure a reliable water supply in a water shortage situation, RCWD has developed a five stage water shortage contingency plan³ for agricultural, commercial, and domestic customers that would take effect and provide adequate water supply to the area (refer to Section 4.13, *Public Services & Utilities*).

Infrastructure Impacts (of Implementing Projects)

Most infrastructure including sewer lines, domestic water transmission lines, and dry utilities will be placed underground within existing or proposed roadway right-of-ways. In addition, infrastructure improvements (pump stations, water tanks, roundabouts, etc.) are anticipated to be constructed within the Project area where deemed necessary. The construction of additional water transmission lines could increase the potential for new and existing implementing projects to consume more water.

Summary of Applicable Existing Regulations and Policies

- a) General Plan policies OS 1.1 through OS 1.3 manage water supplies.
- b) General Plan policies OS 2.1 through OS 2.5 are conservation policies that manage existing supplies by promoting the efficient use of water.
- c) General Plan policies OS 4.1 through OS 4.7 involve recharging the groundwater supplies.
- d) General Plan policy LU 5.3 requires project be consistent with the Urban Water Management Plan.
- e) General Plan policy LU 17.2 requires water resources and sewer facilities to meet the demands of the proposed land use.
- f) RCWD has developed a Water Shortage Contingency Plan.

³ <https://www.ranchowater.com/files/RCWD%20Water%20Shortage%20Contingency.pdf>.

Mitigation Measures

HYD-6 All implementing projects shall provide a plan of service analysis in determining the needs for water distribution, fire protection, service pressures and connection into the Rancho California Water District's (RCWD) master planned system. These plans must show requirements of off-site transmission mains to be constructed to serve certain areas of the project. It will be the responsibility of each implementing project proponent to ensure water system reliability/redundancy for domestic, irrigation, and emergency needs, as determined appropriate through the County's discretionary review process, and RCWD staff review.

Conclusion

The RCWD IRWMP states that the watershed currently faces significant water supply issues. The compliance with existing regulatory programs, including General Plan policies, project design features, and mitigation measure HYD-6 would reduce the potential impact to less than significant.

Impact 4.9-3: Erosion or Siltation

Threshold: *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or offsite?*

Determination: Less than Significant with Mitigation

Wine Country Community Plan Overview of Programmatic Impacts

The Project would guide the rural development of the Project area to include wineries, equestrian, and residential uses. Implementing projects would cause an increase in impervious surfaces and urban runoff; however, by minimizing the amount of grading and utilizing existing drainage patterns projects should be able to minimize their effect on downstream water courses, as well as their impacts on erosion or siltation. All implementing projects are required to comply with County and RWQCB regulations and policies regarding water quality, including minimization of construction-related and long-term erosion. Erosion and siltation issues are also addressed in Section 4.6, *Geology, Soils and Seismicity*.

The Project area is located within unincorporated Riverside County, where there is no drainage master plan. Six drainage areas exist within the site. As shown on Exhibit 4.9-1, *Watershed Boundary Map*, the project site is made up of six general drainage areas:

- a) Drainage Area 1 drains to Tualota Creek, which ultimately drains into Lake Skinner.
- b) Drainage Area 2 drains to Murrieta Creek.
- c) Drainage Area 3 drains west and gets picked up in a series of storm drain culverts, which drain to the Long Canyon Wash. Long Canyon Wash ultimately drains to Murrieta Creek.
- d) Drainage Area 4 drains westerly to the Crowne Hill Wash. These flows are picked up in a large storm drain system in DePortola Road, which outlets into Temecula Creek.
- e) Drainage Area 5 drains westerly to Anza Road. These flows are then conveyed in a natural channel that parallels the west edge of Anza and eventually end up in Temecula Creek.
- f) Drainage Area 6 drains northerly to Temecula Creek.

Construction-related Impacts (of Implementing Projects)

Implementing projects allowed pursuant to the Project are expected to occur over a 25-year period. Temporary construction-related impacts are anticipated to involve grading to construct buildings, access roads, signage, lighting, landscaping, onsite utilities, trails and necessary infrastructure improvements to support implementing projects. Due to the rural nature of the area, the pre-existing drainage patterns should generally be maintained.

Operational Impacts (of Implementing Projects)

The Project would support new and existing rural residential, winery, and equestrian uses, as well as other commercial activities that encourage tourism. The goal of the Project is to expand development opportunities and attract tourists to the area. Future implementing projects within the Winery, Equestrian, and Residential Districts should avoid the alteration of existing drainages, whenever possible. Drainage modifications, if necessary, will be subject to County and RCFCWCD discretionary review relative to flood control and water quality, and review by RWQCB, ACOE, CDFG and USFWS relative to effects upon drainage courses and associated wildlife and water quality.

Infrastructure Impacts (of Implementing Projects)

Most infrastructure including sewer lines, domestic water transmission lines, and dry utilities will be placed underground within existing or proposed roadway right-of-ways. In addition, infrastructure improvements (pump stations, water tanks, roundabouts, etc.) are anticipated to be constructed within the Project area where deemed necessary. The construction of new infrastructure should be done in a way to avoid the alteration of existing drainages whenever possible. Any drainage modifications, if required, would be designed in accordance with County of Riverside (e.g., EPD, Planning Department, and RCFCWCD) and outside resource agency (e.g., ACOE, CDFG, RWQCB, USFWS) criteria, as appropriate.

Summary of Applicable Existing Regulations and Policies

- a) All projects must comply with the Clean Water Act, Porter-Cologne Water Quality Control Act and Fish and Game Code and other applicable local, State and Federal regulations, relative to drainage modifications or discharge, as administered by the County, RWQCB, CDFG, ACOE and USFWS.
- b) General Plan Policy Safety 4.4 reduces potential impacts related to drainage pattern and runoff alterations that could cause flooding.
- c) General Plan Policy Safety 4.5 reduces potential impacts related to drainage pattern and runoff alterations that could cause flooding by prohibiting substantial modifications to watercourses.
- d) General Plan Policy Safety 4.7 reduces potential impacts related to drainage pattern and runoff alterations that could cause flooding by requiring that potential modifications to watercourses be done in a manner that is the least damaging to the environment.
- e) General Plan Policy Safety 4.8 reduces potential impacts related to drainage pattern and runoff alterations that could cause flooding by allowing for the provision of developments to be along the floodway fringe only if it has been determined that proposed structures can be flood-proofed and would not contribute to property damage or risks to public safety.
- f) General Plan Policy Safety 4.9 reduces potential impacts related to drainage pattern and runoff alterations that could cause flooding by requiring those proposed development that fall within the floodway fringe be capable of withstanding flooding and use a minimum amount of fill for the project.

- g) General Plan Policy Safety 4.10 reduces potential impacts related to drainage pattern and runoff alterations that could cause flooding by requiring all development projects to address and mitigate any impacts that they may have on the carrying capacity of the local and regional storm drain system.

Mitigation Measures

HYD-7 All implementing projects that fall within the Murrieta Creek Area Drainage Plan shall be subject to Area Drainage Plan (ADP) fees, as enforced by the Riverside County Flood Control and Water Conservation District (RCFCWCD).

HYD-8 All implementing projects shall consider the following flood control measures and shall use them, as applicable:

- Minimize encroachment into floodplains and watercourses to the satisfaction of the Riverside County Flood Control and Water Conservation District prior to applicable plan/permit approval.
- Phase so that 100-year flood protection is ensured in all areas of development. Provide protection against flooding, erosion, siltation, and water quality impacts through interim improvements (such as temporary debris basins, earthen channels/berms, check dams, sand bag barriers, or other temporary BMPs and flood control protection measures).
- Keep building pad construction from flood hazard for the 100-year frequency storm by elevating finished floor elevations above the 100-year level of flood protection.
- Detain any incremental increase in drainage within the implementing project's boundaries. For the portion of the project site within the Murrieta Creek Area Drainage Plan (ADP), detain incremental increases in drainage until the Murrieta Creek ADP is fully implemented downstream of the implementing project site.

Conclusion

Adherence to the existing General Plan policies, project design features and mitigation measures HYD-7 through HYD-8 would ensure that impacts associated with the Project remain less than significant. It should be noted that the provided analysis is consistent with the requirements of a program EIR and future site-specific implementing projects proposed within the Project area will require individual site-specific CEQA analysis at a later date.

Impact 4.9-4: Surface Runoff

Threshold: *Would the project substantially alter the existing drainage pattern of the Site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?*

Determination: ***Less than Significant with Mitigation***

Implementing projects that could be constructed pursuant to the implementation of the Project could increase the amount of urban runoff due to an increase in impervious area (i.e. roof tops and paving). Mitigation of this increased runoff can typically be handled onsite through the use of detention facilities, infiltration, and maximizing pervious area. Project specific requirements would need to be evaluated on a project level during the County's entitlement and permitting process and would be beyond the scope of this programmatic evaluation; however, it is reasonable to assume that projects would be required to

adhere to County standards for detention of incremental flows. Since the majority of the implementing projects proposed pursuant to the Plan would be rural in nature, pre-existing drainage patterns can be maintained wherever possible. Potential impacts to natural drainage courses would be regulated by State, federal, regional, and County agencies to reduce or eliminate adverse impacts. With appropriate layout for implementing projects and implementation of appropriate mitigation measures, impacts to downstream drainage facilities would not be anticipated. Existing regulations would require implementing projects to provide their own flood protection for structures and access and conformance to those regulations would protect downstream properties from adverse impacts. With implementation of on-site drainage control and appropriate mitigation measures, and given the overwhelmingly agricultural nature of anticipated implementing projects within the Project Area, implementation of the Project would not be expected to result in significant impacts related to surface runoff.

Refer to the discussion under impact 4.9-3 above.

Summary of Applicable Existing Regulations and Policies

- a) 404 Permit from ACOE ensures that projects obtain agency-approved proof the project will not result any illegal “fill” of waters of the U.S.
- b) General Plan Policy Safety 4.4 reduces potential impacts related to drainage pattern and runoff alterations that could cause flooding
- c) General Plan Policy Safety 4.5 reduces potential impacts related to drainage pattern and runoff alterations that could cause flooding by prohibiting substantial modifications to watercourses.
- d) General Plan Policy Safety 4.7 reduces potential impacts related to drainage pattern and runoff alterations that could cause flooding by requiring that potential modifications to watercourses be done in a manner that is the least damaging to the environment.
- e) General Plan Policy Safety 4.8 reduces potential impacts related to drainage pattern and runoff alterations that could cause flooding by allowing for the provision of developments to be along the floodway fringe only if it has been determined that proposed structures can be flood-proofed and would not contribute to property damage or risks to public safety.
- f) General Plan Policy Safety 4.9 reduces potential impacts related to drainage pattern and runoff alterations that could cause flooding by requiring those proposed development that fall within the floodway fringe be capable of withstanding flooding and use a minimum amount of fill for the project
- g) General Plan Policy Safety 4.10 reduces potential impacts related to drainage pattern and runoff alterations that could cause flooding by requiring all development projects to address and mitigate any impacts that they may have on the carrying capacity of the local and regional storm drain system.

Mitigation Measures

Refer to Mitigation Measures HYD-7, and HYD-8 above and LU-1 in Section 4.10, *Land Use and Relevant Planning*. No additional mitigation is necessary.

Conclusion

Adherence to the existing General Plan policies, project design features, and mitigation measures HYD-7 through HYD-8 would ensure that impacts associated with the Project remain less than significant.

As previously discussed, ministerial actions are not considered “projects” under CEQA and are, therefore, not subject to environmental review as discussed above. However, each implementing

project, ministerial or discretionary, will be required to submit a Change of Zone application with the County. Through the Change of Zone development approval process, Mitigation Measure LU-1 will require that ministerial actions implementing mitigation for flooding onsite and offsite, reducing potential future impacts from implementation projects to less than significant levels.

Impact 4.9-5: Stormwater

Threshold: *Would the project create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

From Public Utilities:

Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Determination: Less than Significant with Mitigation

The Project would guide the rural development of the Project area to include wineries, equestrian, and residential uses. Implementing projects would cause an increase in impervious surfaces; however, by minimizing the amount of grading and utilizing existing drainage patterns, implementing projects should be able to minimize their effect on drainage patterns and surface runoff. Based on the rural nature of the area and the anticipated development being largely agricultural, it is recommended that infiltration be utilized whenever possible as water quality mitigation (refer to Mitigation Measures HYD-4 and HYD-5). As previously mentioned, the Project area is located within unincorporated Riverside County, in an area where there is no master drainage plan. Six major drainage areas exist within the site.

Refer to the discussion under impacts 4.9-1, 4.9-3 and 4.9-4.

Summary of Applicable Existing Regulations and Policies

- a) General Plan policies Safety 4.4 through 4.6 regulate the alteration of floodways and water courses.
- b) General Plan policy Safety 4.9 places restrictions on development in flood areas.
- c) General Plan policy Safety 4.10 requires projects to mitigate any impacts on the carrying capacity of the storm drain system.
- d) General Plan policy Safety 4.18 requires that storm drains be designed based on the level of inundation.

Mitigation Measures

Refer to Mitigation Measures HYD-1 through HYD-5, HYD-7, and HYD-8 above. No additional mitigation is necessary.

Conclusion

Adherence to the existing General Plan policies, the project design features, and mitigation measures HYD-1 through HYD-5, HYD-7, and HYD-8 would ensure that impacts associated with the Project remain less than significant.

Impact 4.9-6: Water Quality

Threshold: *Would the project otherwise substantially degrade water quality?*

Determination: *Less than Significant with Mitigation*

Refer to the discussion under Impact 4.9-1.

Summary of Applicable Existing Regulations and Policies

- a) Section 401 of the Clean Water Act requires discharges to obtain a state water quality certification.
- b) Section 404 of the Clean Water Act regulates discharges into Waters of the US.
- c) A NPDES permit, regulating the discharge of pollutants from a point source is required for projects over five acres.
- d) Projects are also regulated by the Porter-Cologne Water Quality Control Act and other applicable local, State and Federal regulations.

Mitigation Measures

Refer to Mitigation Measures HYD-1 through HYD-5 above. No additional mitigation is necessary.

Conclusion

Adherence to the existing federal and state regulations in addition to the project design features and Mitigations Measures HYD-1 through HYD-5 would ensure that impacts associated with the Project remain less than significant.

Impact 4.9-7: Flooding and Housing

Threshold: *Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

Determination: *Less than Significant with Mitigation*

Wine Country Community Plan Overview of Programmatic Impacts

The Project area is predominantly comprised of rural development. Based on this it is recommended that rural design criteria be used to plan implementing projects when practical. By minimizing the amount of grading and utilizing existing drainage patterns projects should be able to minimize their effect on downstream water courses, as well as their impacts on water quality. Maintaining the use of existing roadside swales is a recommended method to help maintain these existing drainage patterns. Low lying areas should typically be reserved for passive uses such as agriculture, rather than the placement of buildings. Implementing projects shall be required to provide their own flood protection for access and structures, as well as downstream flood mitigation.

A large portion of the Equestrian District is within a FEMA 100-year Floodplain. The limits of each floodplain type (Zone A and Zone X [shaded]) is shown on Exhibit 4.9-3, *FEMA Floodplain Areas*. Any project that requires fill to be placed within this area, which alters the limits of the floodplain will be required to process a Letter of Map Revision based on Fill (LOMR-F) with FEMA. According to the proposed zoning text (Zoning Ordinance Amendment No. 348.4729), one-family residential dwelling

units would be allowed within the Equestrian District zoning. In addition, pursuant to this zoning, farm labor camps are allowed with a conditional use permit. Individual projects would require design review by the County.

Construction-related Impacts (of Implementing Projects)

No significant impacts are anticipated.

Operational Impacts (of Implementing Projects)

The Project will support new and existing rural residential, winery, and equestrian uses, as well as other commercial activities that encourage tourism. The goal of the Project is to expand development opportunities and attract tourists to the area. Future implementing projects within the Project area could include building within the FEMA Zone A and Zone X (shaded) limits. Future housing development in this area would be subject to County and RCFCWCD review for drainage and flood control improvements necessary to accommodate the specific implementing project.

Infrastructure Impacts (of Implementing Projects)

No impacts are anticipated.

Summary of Applicable Existing Regulations and Policies

- a) Ordinance No. 348 prevents the permanent occupancy or residency by persons in areas at risk due to flooding.
- b) Ordinance No. 457 ensures that potential flood impacts on structures and the people and property occupying them are minimized.
- c) Ordinance No. 458 establish and implement measures that mitigate potential flood hazards within the County.
- d) General Plan policies Safety 4.1 through 4.3 regulate construction in the flood plain.
- e) General Plan policy Safety 4.9 requires development within the floodway be adequately flood-proofed.
- f) General Plan policy Safety 4.11 requires projects to mitigate any impacts on the carrying capacity of the storm drain system.
- g) General Plan policies Safety 4.20 through 4.23 encourage protective measures to reduce damage from floods.
- h) Projects that propose development within a FEMA mapped floodplain or otherwise alter drainage or runoff, must process a Conditional Letter of Map Revision (CLOMR) with FEMA prior to grading.
- i) Standard Conditions or Requirements. Four mitigation measures prepared for the 2003 General Plan were adopted to reduce flood hazards.
 1. Riverside County shall require that all structures (residential, commercial, and industrial) be flood-proofed from the 100-year storm flows.
 2. Riverside County shall require that fully enclosed areas that are below finished floors have openings to equalize the forces on both sides of the walls.
 3. Riverside County shall require that for agricultural, recreation, or other low-density uses, flows are not obstructed and that upstream and downstream properties are not adversely affected by increased velocities, erosion backwater effects, or concentration of flows.

4. If an applicant does hydrological studies, engineers structures to be safe from flooding, and provides evidence that the structures will not adversely impact the floodplain, Riverside County may allow development into the floodway fringe.

Mitigation Measures

Refer to Mitigation Measures HYD-8 above and LU-1 in Section 4.10, *Land Use and Relevant Planning*. No additional mitigation is necessary.

Conclusion

Adherence to the existing ordinances, General Plan policies, standard conditions or requirements, Mitigation Measures HYD-8 and LU-1, and project design elements, would ensure that impacts associated with the Project remain less than significant.

Impact 4.9-8: Flooding and Structures

Threshold: *Would the project place structures within a 100-year flood hazard area that would impede or redirect flood flows?*

Determination: Less than Significant with Mitigation

Refer to the discussion under impact 4.9-7, above.

Summary of Applicable Existing Regulations and Policies

- a) Ordinance No. 458 establish and implement measures that mitigate potential flood hazards within the County.
- b) Ordinance No. 461 sets standards and engineering specifications for roads, bridges and other transportation-related facilities, including those aspects of flood control associated with them.
- c) General Plan policies Safety 4.1 through 4.3 regulate construction in the flood plain.
- d) General Plan policy Safety 4.9 requires development within the floodway be adequately flood-proofed.
- e) General Plan policy Safety 4.11 requires projects to mitigate any impacts on the carrying capacity of the storm drain system.
- f) General Plan Policy Safety 4.18 reduces potential flooding hazards caused by impeding or redirecting flows by requiring that the design and upgrade of street storm drains for development proposals be based on the depth of inundation.
- g) General Plan policies Safety 4.20 through 4.23 encourage protective measures to reduce damage from floods.
- h) Standard Conditions or Requirements. two mitigation measures prepared for the 2003 General Plan were adopted to reduce flood hazards.
 1. Riverside County shall prohibit alteration of floodways and channelization unless alternative methods of flood control are found to be technically, economically and practicably infeasible.
 2. Riverside County shall require the 10-year flood flows to be contained within the top of curbs and the 100-year flood flows within the street rights-of-way.

Mitigation Measures

Refer to Mitigation Measures HYD-8 above and LU-1 in Section 4.10, *Land Use and Relevant Planning*. No additional mitigation is necessary.

Conclusion

Adherence to the existing ordinances, General Plan policies, standard conditions, Mitigation Measures HYD-8 and LU-1, and project design features would ensure that impacts associated with the Project remain less than significant.

Impact 4.9-9: Flooding Risk

Threshold: *Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam (dam inundation area)?*

Determination: Less than Significant

The Project will support new and existing rural residential, winery, and equestrian uses, as well as other commercial activities that encourage tourism. The goal of the Project is to expand development opportunities and attract tourists to the area. In general, Temecula Valley Wine Country is rural in character and may lack the adequate urban infrastructures, such as street gutters and storm drains, for flood control protection of existing residences and businesses from 100-year flood events. Future implementing projects within the Project area could include development within the FEMA Zone A and Zone X (shaded) limits. Also, failure of a dam or flood control structure for Vail Lake could cause widespread flooding, as well as risks to lives and property.

Refer to the discussion under impact 4.9-7, above.

Summary of Applicable Existing Regulations and Policies

- a) General Plan policies S 4.1, S 4.3 through S 4.9, S 4.12, and S 4.16 through S 4.19 provide mitigation for impacts related to dam inundation and flooding hazards.

Mitigation Measures

Refer to Mitigation Measures HYD-8 above and LU-1 in Section 4.10, *Land Use and Relevant Planning*. No additional mitigation is necessary.

Conclusion

Adherence to the existing General Plan policies, existing standards and regulations, Adherence to the existing ordinances, General Plan policies, standard conditions or requirements, Mitigation Measures HYD-8 and LU-1, and project design features would ensure that impacts associated with the Project remain less than significant.

Impact 4.9-10: Seiche, Tsunami, or Mudflow

Threshold: *Would the project be inundated by seiche, tsunami, or mudflow?*

Determination: No impact

Seiche is defined as a standing wave in an enclosed or partially enclosed body of water like a lake or reservoir. A tsunami is a series of water waves caused by a displacement of a large volume of a body of water. Mudflow or a mudslide is a rapid downhill movement of a large mass of mud formed from loose soil and water. Two lakes (Lake Skinner and Vail Lake) are located near the Project, however, it is not likely that the Project would be inundated by seiche from either body of water due to intervening topography and distance from the site. The Project is located approximately 44 miles inland from the Pacific coast and protected by the Santa Margarita Mountains. It is unlikely that the Project would be inundated by tsunami. Mudflow could occur in any area, especially with the mixture of wildfires and rain. There is a high potential for mudflows to occur in some areas of unincorporated Riverside County which contain areas with steep slopes.

Refer to the discussion under Impact 4.9-7, above.

Summary of Applicable Existing Regulations and Policies

- a) General Plan policy Safety 4.1 places restrictions on construction within the 100- and 500-year floodplains.
- b) General Plan policy Safety 4.17 requests that public land be used to create open space zoning inundation zones.
- c) General Plan Policy 4.18 requests that the County assess and upgrade inundation risks and protection.

Mitigation Measures

No additional mitigation is necessary.

Conclusion

No impacts are anticipated in this regard.

4.9.6 CUMULATIVE IMPACTS

Threshold: *Would the project result in cumulative impacts associated with implementation of the Wine Country Community Plan?*

Determination: *Less than Significant with Mitigation*

Cumulative impacts to hydrology and water quality are addressed in the Riverside County General Plan Final EIR No. 441, which is incorporated by reference into this EIR. The Project would not directly result in degradation of surface water quality, groundwater, drainage or erosion, or flooding impacts. Compliance with Federal, State, and local requirements on a project-by-project basis would reduce cumulative impacts to a less than significant level at the time of a implementing project is developed.

4.9.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

No unavoidable significant impacts have been identified with respect to Hydrology and Water Quality.



4.9 Hydrology and Water Quality

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