3.6 Geology and Soils

INTRODUCTION

This section of the EIR provides a discussion of the geologic, seismic and soil conditions at the proposed project site. The potential impacts of the proposed project related to existing geologic, seismic and soil conditions are evaluated and feasible mitigation measures are proposed where applicable. The following discussion is based on the *Geotechnical Investigation and Geologic Feasibility Evaluation Update* (2007) prepared for the project. This report is contained in **Appendix E** of this EIR.

3.6.1 ENVIRONMENTAL SETTING

REGIONAL GEOLOGIC SETTING

The project site is located in the Coast Ranges Geomorphic Province of California. The primary local feature is the Hollister Valley which is bounded on the southwest by the San Andreas Fault Zone and granitic and Tertiary marine and volcanic rocks of the Gabilan Range. To the north and east, the valley is bounded by the Diablo Range, which is composed of metamorphosed marine sedimentary and igneous rocks of the Franciscan Formation and Great Valley Sequence. The project site is underlain by the marine sediments of the Pliocene Purisma Formation. The surficial materials consist of older alluvial deposits of unconsolidated to semi-consolidated sand, gravel, silt and clay.

PROJECT SITE SETTING

Topography

The project site is comprised of the rectangular-shaped Plan Area, along with an immediately-adjacent 26-acre site at the northeast corner for a potential wastewater treatment plant (WWTP) for the project, as well as the existing LESSALT and CDF sites along Fairview Road. The terrain of the project site is characterized as gently to moderately rolling topography, with north-south trending ridges and valleys. The dominant topographic feature is a broad ridge, 200 to 500 feet wide, which trends through the central area of the project site from north to south. The terrain of the western portion of the project site slopes gently upward toward this ridge at inclinations ranging from 2 to 12 degrees. On the east of the ridge, the terrain slopes downward to a northward trending valley before rising again toward the eastern site boundary. The slopes in this area range from about five degrees to 14 degrees and locally up to about 18 degrees.

Overall, the hillsides are characterized by smooth, well-rounded, gentle slopes. Site elevations range from approximately 350 feet at the northwestern corner to about 500 feet along the central crest of the site. There are no defined drainage courses on the project site, although the north trending valley in the eastern portion of the site serves as a broad swale during major storms. Santa Ana Creek and a small tributary run roughly parallel to the site several hundred feet to the east. The potential WWTP site contains a linear drainage leading to Dry Creek. These drainages are characterized by deeply incised gorges with slopes ranging from 20 degrees to 30 degrees and locally up to 40 degrees.

Soil Characteristics

According to the geotechnical report, soils on the project site consist of alluvial deposits. These deposits are variable and consist mostly of clay to clayey sand with minor intervals of silt to silty sand, poorly sorted sand, and sandy clay with gravel. The deposits are stiff to hard, and the coarse-grained materials are medium dense to very dense. The alluvial deposits are capped by developed agricultural soils.

The majority of the near-surface soils on the site consist of clay loams or silty clay loams, which are moderately expansive. The higher clay content gives the soil the capacity to absorb and release large amounts of moisture with associated volume changes. During the rainy season these soils swell as water is absorbed, and during the dry season they shrink as water is removed by evapotranspiration.

Faulting and Seismicity

Intensity Criteria

Earthquake magnitude is a measure of the total amount of energy released in an earthquake. With increasing magnitude (i.e. larger earthquakes) ground motions are stronger, last longer, and are felt over larger areas. Earthquake intensity is a measure of the effects of earthquake ground motions on people and buildings. Earthquake intensity is often more useful than magnitude when discussing the damaging effects of earthquakes. The most common intensity scale is the Modified Mercalli Intensity scale, which ranges from I to XII. Table 3.6-1 below, describes the effects of earthquakes and compares the Richter Scale (magnitude) to the Modified Mercalli Scale (intensity). In addition to the Mercalli Scale, faults are classified according to criteria provided by the Uniform Building Code, as identified in Table 3.6-2.

TABLE 3.6-1
MODIFIED MERCALLI INTENSITY SCALE FOR EARTHQUAKES

Richter Magnitude Scale	Modified Mercalli Scale	Effects of Intensity
0.1-3.0	I	Earthquake shaking not felt.
	II	Shaking felt by those at rest.
3.0-4.0	III	Felt by most people indoors; some can estimate duration of shaking.
4.0-5.0	IV	Felt by most people indoors. Hanging objects rattle, wooden walls, frames creak.
	V	Felt by everyone indoors; many estimate duration of shaking. Standing autos rock. Crockery clashes, dishes and glasses rattle. Doors open, close, and swing.
5.0-6.0	VI	Felt by all; many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
6.0	VII	People frightened and walls unsteady. Pictures and books thrown, dishes/glass are broken. Weak chimneys break. Plaster, loose bricks and parapets fall.
6.0-7.0	VIII	Difficult to stand, waves on ponds, cohesionless soils slump. Stucco and masonry walls fall. Chimneys, stacks, towers, elevated tanks twist and fall.
7.0	IX	General fright as people are thrown down. Hard to drive, trees broken, damage to foundations and frames. Reservoirs damaged, underground pipelines broken.
7.0-8.0	X	General panic, ground cracks, masonry and frame buildings destroyed. Bridges destroyed, dams, dikes and embankments damaged. Railroads bent.
8.0	XI	Large landslides, water thrown, general destruction of buildings; pipelines destroyed; railroads bent.
8.0+	XII	Total nearby damage, rock masses displaced. Lines of sight/level distorted. Objects thrown into air.

Source: California Geological Survey, 2002.

TABLE 3.6-2
UNIFORM BUILDING CODE FAULT CLASSIFICATIONS

Fault Type	Characteristics
A	Faults that have a Richter magnitude potential of 7.0 and a slip rate equal to or greater than 5 mm/year. These types of faults are considered to be active and capable of producing large magnitude events. Most segments of the San Andreas Fault are be classified as a Type A fault.
B	All faults that are not Type A or Type C. Includes most of the active faults in California.
C	Faults that have a Richter magnitude potential of less than 6.5 and a slip rate of less than or equal to 2 mm/year. These faults are considered to be sufficiently inactive and not capable of producing large magnitude events such that potential near-source ground shaking effects can be ignored. Most faults outside of California are Type C.

Source: Uniform Building Code.

Of the numerous faults known to exist in the Hollister area, the San Andreas, Quien Sabe, Calaveras and small segments of the Tres Pinos faults are classified by the California Geologic Survey as active or potentially active locally. The San Andreas fault passes through the Gabilan Mountains about six miles to the southwest of the project site. The Quien Sabe fault crosses the edge of the Hollister Valley at the base of the Diablo Range about three miles to the northeast. The Calaveras fault zone trends northeastward through the City of Hollister and is the nearest active or potentially active fault to the project site, located about 2.3 miles to the southwest. The Tres Pinos fault crosses the southern edge of the Hollister Valley, with several splays extending out into the valley, is the closest at approximately two miles southeast of the project site.

The project site is in an area of high seismicity and earthquakes strong enough to cause damage to occur frequently in the Hollister area. The California Geological Survey (1996) divides the Calaveras fault into a northern and southern section, with the estimated earthquake recurrence interval for the southern section at 33 years and the estimated recurrence interval for the northern section at 146 years. The southern section of the Calaveras fault (nearest the project site) is capable of generating an M6.7 (M=moment magnitude) earthquake. Current estimates provided by the Working Group on California Earthquake Probabilities (2003) are that there is a 62% probability of a large magnitude (6.7 or greater) earthquake in the San Francisco Bay area as a whole in the 30-year period ending in 2032. For a large earthquake along specific faults, percentage estimates are 21% for the San Andreas and 11% for the Calaveras fault. It is expected that very intense ground shaking would occur at the site if a large magnitude earthquake were to occur on one of the branches of the Calaveras fault. If the maximum earthquake occurs with an epicenter very near the site, peak ground accelerations could approach or exceed 1g (g=force of gravity).

Landsliding

No landslide or landslide related features have been identified or mapped on the project site. Generalized regional landslide susceptibility mapping indicates that the site is subject to varying degrees of landslide susceptibility in general. The southwestern portion of the site is mapped as 'Least Susceptible to Landsliding,' the hilly, west-central area of the site is 'Marginally Susceptible to Landsliding,' and the eastern half of the site is 'Generally Susceptible to Landsliding.' The eastern edges of the potential WWTP site specifically, near the ravine of the Santa Ana Creek tributary known as Dry Creek, are mapped as 'Most Susceptible to Landsliding.' However, based on its field reconnaissance of the WWTP site, Pacific Geotechnical Engineering did not observe any evidence of landslides and concluded that the overall landslide hazard for the project site should be considered to be acceptably low.

Liquefaction

Soil liquefaction occurs where saturated, cohesionless or granular soils undergo a substantial loss in strength due to excess build-up of water pressure within the pores during cyclic loading such as earthquakes. Due to the loss of strength, soils gain mobility that can result in significant deformation, including both horizontal and vertical movement where the liquefied soil is not confined. Intensity and duration of seismic shaking, soil characteristics, overburden pressure and depth to water are all primary factors affecting the occurrence of liquefaction. Soils most susceptible to liquefaction are saturated, loose, clean, uniformly graded, Holocene age, and fine grained sand deposits. Silts and silty sands have also been proven to be susceptible to liquefaction or partial liquefaction. The occurrence of liquefaction is generally limited to soils within 50 feet of the ground surface.

Based on the nature of the subsurface material encountered in exploratory drill holes and regional data suggesting depth to groundwater is deeper than 50 feet, indications are that the potential for liquefaction to occur on site is low.

Seismically-Induced Settlement

Seismic densification is the densification of unsaturated, loose granular soils due to strong vibration such as that resulting from earthquake shaking. Granular soils and loose fills above groundwater may be subject to such phenomenon. The subsurface soils encountered during the initial soils investigation consisted of medium dense to dense sand and gravel layers. These materials generally have low susceptibility to seismically-induced settlement.

3.6.2 REGULATORY SETTING

GENERAL PLAN POLICIES

The General Plan contains the following policies with regard to geologic hazards:

Land Use Element:

Policy 32 Specific development sites shall be free from the hazards identified within the Open Space and Conservation Element Maps (e.g., faults, landslides, hillsides over 30% slope, flood plains). The site shall also be on soil suitable for building and maintaining well and septic systems (i.e., avoid impervious soils, high percolation or high groundwater areas, set back from creeks). Absent adequate mitigation, development shall not be located on environmentally sensitive lands (wetlands, erodible soil, archaeological resources, important plant and animal communities).

Policy 33 Specific development sites shall avoid, when possible, locating on an environmentally sensitive area (wetlands, erodible soils, important plant and animal communities, archaeological resources).

Open Space and Conservation Element:

Policy 37 Development policy for hazardous areas

It will be the policy of the County to limit densities in areas that are environmentally hazardous (fault, landslides/erosion, hillsides over 30% slope, flood plains) to levels that are acceptable for public health and safety for citizens and property. It is the County's policy to apply zoning categories and scenic easements for the protection of environmentally hazardous or aesthetically vulnerable resources.

Policy 39 Restrict creation of new lots in hazardous areas

It is the policy of the County to prohibit new subdivisions or lot-line adjustments that will create new lots located entirely within hazardous areas (slopes greater than or equal to 30%, 100-year flood plain, landslide/erosion hazard, fault zone).

State Law

California and Uniform Building Codes

The California Building Code (Title 24 of the California Code of Regulations) and the Uniform Building Code provide standards for testing and building construction as well as safety measures for development within earthquake prone areas.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (PRC Division 2, Chapter 7.5, commencing with Section 2621) was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. The project site is not located within an Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (PRC Division 2, Chapter 7.8, commencing with Section 2690) (1990) requires the State Geologist to designate Seismic Hazard Zones. These zones assist cities and counties in fulfilling their responsibilities for protecting the public from the effects of non-surface fault rupture earthquake hazards such as strong ground shaking, earthquake-induced landslides, liquefaction, or other ground failures. The California Geological Survey has not issued a Seismic Hazards Map for the Hollister area, which includes the project site.

3.6.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on the CEQA Guidelines and generally accepted standards for environmental documents prepared pursuant to CEQA. For the purposes of this EIR, impacts are considered to be significant if any of the following would result from implementation of the proposed project:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving,
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
  - Strong seismic ground shaking;
  - Seismic-related ground failure including liquefaction; or,
  - Landslides;
- Result in a substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on an expansive soil, as defined in the current California and Uniform Building Codes, creating substantial risks to life or property; and/or,
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater.

METHODOLOGY

The following impact evaluation is based on the findings and recommendations contained in the geotechnical report by Pacific Geotechnical Consultants, which is included as **Appendix E** of this EIR.

The geotechnical investigation included research and review of geologic literature and the property, including geologic maps, seismic shaking maps, and seismically-induced liquefaction potential maps; performance of geologic field reconnaissance; sampling and classifications of eight soil borings at the site; and laboratory testing of selected soil samples. The findings and recommendations of the geotechnical investigation form the basis of the following discussion of impacts and mitigation.

PROJECT IMPACTS AND MITIGATION MEASURES

Ground Rupture

The project site is not located within an Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist. There are no known or potentially active faults located within or near the vicinity of the project site. Based on the distance of the nearest fault to the project site, the proposed project would not expose people or property to ground rupture and **no impact** is expected.

Seismic Ground Shaking

Impact 3.6-1 Strong ground shaking occurring on the site during a major earthquake may cause severe damage to future buildings and structures. This is considered a **potentially significant** impact.

Historically, major earthquakes centered on the Calaveras and San Andreas faults have resulted in moderate to severe ground shaking at the project site. It is expected that a major earthquake will result in severe ground shaking at the site during the life of the project.

Ground shaking will cause dynamic loading resulting in stress to buildings and structures. However, structures designed and built in accordance with the California and Uniform Building Codes should respond well except during the most severe potential ground shaking. The foundation soils at the site are strong and dense and should respond satisfactorily under the stresses imposed by strong ground motion.

Seismic impacts will be reduced to a **less than significant** level through implementation of the following mitigation measures:

MM 3.6-1 All proposed improvements on the project site shall be designed and constructed according to recommendations by qualified design professionals and applicable building codes. Design plans shall be subject to review and approval by the appropriate design professional (i.e. geotechnical engineer, structural engineer) and the County as required.

Erosion

Impact 3.6-2 Project grading and removal of vegetation may result in soil exposure, increased erosion and sedimentation of downstream water bodies. This is considered a **potentially significant** impact.

Increased soil erosion may occur with the construction of improvements such as buildings, roads, parking areas, drainage and other permanent improvements. Heavy earth moving equipment is used for site grading and compaction. In general, grading activities create the potential for increased ground instability and erosion, including erosion associated with clearing of vegetation, such as the orchard, on the project site. Grading and other construction-related activities would disturb the soil, which could increase soil erosion rates. All disturbed soil is subject to erosion with the amount of erosion dependent on soil type, vegetation cover, slope length and gradient. Appropriate design and implementation of erosion control as outlined below will provide means of reducing this impact to be **less than significant with mitigation incorporated**.

The Specific Plan contains the following policies with regard to erosion control and soil protection in Section 5.3, Resource Management Policies, Soils and Grading Protection Policies:

- Prior to application submittal of the first Small Lot Final Subdivision Map (with "buildable" lots), the developers shall submit to the County for its review and approval a Master Grading Plan. All development within the Plan Area shall comply with the Master Grading Plan, as it may be amended. The Master Grading Plan shall provide for earth work operations within the entire plan area. The average grade of the plan area shall be approximately six percent, with gentle slopes of two to four percent being ideally targeted; provided, however, that grading or specific conditions, such as in retaining walls, may involve grades in excess of six percent.

- Improvement Plans submitted for County review and approval shall include drainage and erosion control plans. Specific erosion control measures shall be adopted for all development within the Plan Area to protect area waterways from erosion and debris during construction. Such measures shall include, but not necessarily be limited to, seeding or graded areas, watering during grading activities to reduce wind erosion, and the use of hay bales and filter cloth to prevent siltation of stream courses.
- Soil exposed during grading which will be left exposed and is not under active construction during the rainy season shall be promptly replanted with native compatible, drought-tolerant vegetation.
- Drainage problems resulting from poor soil permeability shall be reduced through development of gravel subdrains and the creation of swales and channels to convey runoff.
- Limitations on landscaping created by shallow soils, limited water-bearing capability, and/or impermeable underlying materials shall be reduced through the following measures or a combination thereof:
    - Over excavation or drilling of areas to be landscaped followed by the importation of topsoil;
    - Use of drought-tolerant or shallow-rooted landscaping;
    - Use of efficient irrigation systems; and
    - Development of uses that allow for common landscaped areas with guaranteed maintenance.
- Best Management Practices (BMPs) shall be incorporated into the design of drainage systems for individual areas of development with the Plan Area.
- Sediment traps, evaporation basins, flow reduction devices, and other methods to reduce the volume of pollutants in pond surface runoff shall be installed in the storm drain system according to County standards.

- Rock energy dissipaters or other methods shall be used at the outflow points of any culverts.

- The Public Works Department shall approve all drainage facility designs prior to the development of individual projects within the Plan Area.

To ensure that potential water quality impacts as a result of erosion are minimized to the greatest extent feasible, the following mitigation measure is included:

MM 3.6-2 All erosion control policies included within Section 5.3 of the Specific Plan, Resource Management Policies, Soils and Grading Protection Policies, as well as measures required within Mitigation Measure **MM 3.8-2**, shall be implemented during the construction and operational phases of the project.

Landslides

Impact 3.6-3 Due to soil characteristics and slopes, there is a potential for landslides on the relatively steeper slopes of the site. This is considered to be **a potentially significant impact**.

The majority of the hilly slopes on the project site are considered to be marginally susceptible to landsliding at worst. Further, since no structures are planned near these steeper slopes, there would be minimal structural hazard associated with the project. To ensure that final slopes are appropriately designed and maintained, resulting in **less than significant** landslide impacts, the following mitigation measure shall be implemented:

MM 3.6-3 Geotechnical investigations shall be required in conjunction with the grading plans for each development phase of the project, in accordance with the timing for the Master Grading Plan. The geotechnical engineer shall evaluate the proposed grading and drainage improvements, and proposed building foundations. Recommendations shall include specifications for cut and fill slopes, and may include localized replacement of native soil with engineered fill, and specification of minimum setbacks from ravine areas. The developer shall implement all recommended mitigation measures, as required by County Public Works.

Impact 3.6-4 The potential wastewater treatment facility is shown to be sited on a parcel which includes terrain classified as being "most susceptible" to landsliding. Landsliding could result in damage to the facility and potential contamination of the immediately surrounding area. This is considered a **potentially significant** impact.

The proposed project is anticipated to connect to the City of Hollister Domestic Wastewater Treatment Plant. However, construction of an on-site wastewater treatment plant is a potential option for wastewater treatment in the event that connecting to the City's system is not feasible. Given the topography of the WWTP site, there is some risk of landslide. According to the geotechnical report prepared for the project, however, landslide-related impacts to any facility constructed on this site can be minimized through the geotechnical design review process and siting criteria. The following mitigation measure will reduce potential landslide impacts associated with the treatment plant to a **less than significant** level:

MM 3.6-4 In the event the WWTP treatment option is chosen, design consideration shall be made for locating the treatment plant building and effluent storage pond onto gently sloping terrain and keeping grading to a minimum. Additional geologic and geotechnical analysis shall be prepared as needed prior to the County's issuance of any additional discretionary permit for the WWTP facility, including identifying specific measures to minimize potential landslide risk. The developer shall design and construct the facility such that it adequately addresses potential landsliding risks and implements the recommended measures as set forth in the geologic and geotechnical analyses and as approved by County Public Works.

Serving the project through the City of Hollister Domestic Wastewater Treatment Plant would also eliminate the potential landslide risk for this WWTP site, since it would not be developed with the WWTP facility.

Liquefaction

Seismically-induced liquefaction is a potential concern where saturated, loose sands are present within about 50 feet of the ground surface. Based on the review conducted for this EIR, indications are that conditions are low for liquefaction to occur on-site, due to the nature of the subsurface material encountered in exploratory drill holes and regional data suggesting depth to groundwater is deeper than 50 feet. **No impact** is expected.

Seismically-induced Settlement

Impact 3.6-5 Granular soils and loose fills above groundwater on the site may be subject to seismic settlement. This is considered a **potentially significant** impact.

Seismic densification is the densification of unsaturated, loose granular soils due to strong vibration such as that resulting from earthquake shaking. The subsurface soils encountered in the test borings consist of medium dense to dense sand and gravel layers. These materials generally have low susceptibility to seismically-induced settlement. With implementation of the following mitigation measure, this impact will be **less than significant**.

MM 3.6-5 Engineered fills for construction of the project shall be placed and compacted in accordance with the recommendations of the design-level geotechnical reports and as approved by County Public Works to reduce the potential for seismically-induced settlements.

Expansive Soils

Impact 3.6-6 Expansive soils present on the site may cause movement or heaving, potentially resulting in damage to foundations, concrete pads and pavements. This is considered a **potentially significant** impact.

As discussed above, the majority of the near-surface soils on the project site consist of clay loams or silty clay loams, which are moderately expansive. The expansion (or swell) of soils can exert pressures against foundation elements, and shrinking can result in consolidation beneath foundation elements. Structures built on foundations that are not designed for such soil movements can be deformed and damaged. To reduce potential for impacts related to expansive soils to a less than significant level, the following mitigation measure shall be implemented.

MM 3.6-6 Prior to issuance of grading permits for each phase of the project and in accordance with the timing required under the Master Grading Plan, site-specific geologic and geotechnical analyses shall be conducted for the project site to determine if expansive soils are present. If required by the geologic and geotechnical analyses, expansive soils shall be removed and replaced with low-expansivity soils, or if removal is infeasible, foundations shall be designed to accommodate movements caused by expansive soil, or expansive soils shall be conditioned and treated to minimize expansivity.

Requiring any expansive soils be removed and replaced and/or conditioned, or requiring that foundations be designed to accommodate movements caused by expansive soils, will reduce impacts associated with expansive soils to a **less than significant** level.

Septic Systems

As discussed in **Section 3.14, Wet and Dry Utilities**, soils on the potential WWTP site are capable of supporting the potential wastewater treatment systems. The proposed effluent storage pond is intended primarily to hold treated effluent for later irrigation application to common area landscaping within the project site and/or discharge to the Hollister Reclaimed Water Project, and not as a percolation pond. The pond will be lined with PVC, or alternatively, treated with soil conditioners to minimize seepage. No impacts are therefore anticipated. For complete discussion of the potential treatment plant, see **Section 3.14**.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Geological Impact Risk to Projects

Impact 3.6-7 The project, in combination with past, present, and reasonably foreseeable potential future projects, could result in the cumulative increase in the risk of geological impacts to the future residents of these projects. This is considered a **less than significant** cumulative impact.

Similar to the project, other cumulative developments may pose geological hazards if such impacts are not mitigated. However, each project will be required to evaluate potential geology and soils impacts and to implement feasible mitigation measures to reduce or avoid such impacts. The proposed Santana Ranch project may ultimately be adjacent to other potential future projects to the west and south of the project site. The geotechnical report prepared for the Santana Ranch project has indicated that potential geological hazards associated with the project can be mitigated to a less than significant level through the requirement to prepare design-level geotechnical reports for each phase of the project. These reports are required to incorporate specific measures that would adequately address the identified hazards, as required by **Mitigation Measures MM 3.6-1** through **MM 3.6-6**. With implementation of these mitigation measures, potential geological impacts of the Santana Ranch project will be **less than significant.** Similar to the Santana Ranch project, other cumulative projects will be required to prepare geotechnical reports identifying and addressing potential geological hazards on these parcels, thereby avoiding or minimizing the potential for such hazards on these parcels. For these reasons, cumulative geological hazard impacts as a result of the proposed project, combined with other past, present and reasonably foreseeable projects, are considered to be **less than significant**.

REFERENCES/DOCUMENTATION

County of San Benito. *General Plan, Land Use Element (1992)* and *Open Space and Conservation Element (1995)*.

Governor's Office of Planning and Research, State of California. *Guidelines for Implementation of the California Environmental Quality Act,* as amended. 2009.

Pacific Geotechnical Consultants. *EIR Level Geotechnical Investigation and Geologic Feasibility Evaluation Update*. Proposed Santana Ranch, Fairview Road, San Benito County, California. February 2007.