3.6 GEOLOGY AND SOILS

3.6.1 Introduction

This section addresses geology and soils in relation to proposed implementation of the proposed project. In evaluating these resources, this section includes an analysis of the potential project-related impacts to geology and soils and recommended measures for reducing the identified impacts.

The setting information and analysis contained in this section is based on a site-specific geotechnical report prepared by LandSet Engineers, Inc. for the proposed project (*Geologic and Soil Engineering Feasibility Report for Paraiso Hot Springs SPA Resort, Monterey County, Californi*a, December 2004), and CEQA-level peer review of the LandSet report by Pacific Crest Engineering and Zinn Geology (2008). The LandSet report is included in Appendix D of this Draft EIR.

3.6.2 Environmental Setting

Geology

The regional geology consists of Pre Cretaceous Sierra De Salinas Schist and Cretaceous age Salinian Block granitic rocks with older Paleozoic Era Sur Series metamorphic rocks that occur as roof pendants. These roof pendants predominantly consist of marble and dolomite. Overlying the granitic rocks of the Salinian Block is a series of folded and faulted Tertiary age (Oligocene to middle Miocene) sandstones, conglomerates, and volcanics.

During very late Tertiary to mid Quaternary times, extensive alluvial and fluvial sediments were shed off of Tertiary uplands and deposited as extensive alluvial fans and the Paso Robles Formation. These sediments unconformably overlie all older formations with which they are in contact. Holocene activity has consisted of continued tectonic uplift and down cutting and deposition of the local area streams, mass wasting of upland areas by landslides and erosion, and fault creep along the San Andreas and related fault systems. The regional geology is shown on Figure 3.6-1, Regional Geology.

The project site is situated on the east flank of the Sierra De Salinas Foothills on the west side of the Salinas Valley and is part of the Coast Ranges Geomorphic Province of California. Geologic mapping of the project site and its vicinity during the exploratory borings identified 11 different geologic units, all with varying subsurface conditions a number of distinct geologic soil units, which are illustrated on Figure 3.6-2, Site Geology.

In general, the soil conditions at the project site of the upland areas are composed of bedrock and landslide deposits, while the valley areas are underlain by unconsolidated to semiconsolidated alluvium. The proposed development area is predominantly underlain by alluvium composed of unconsolidated to semiconsolidated sand, silt and clay with minor gravels and cobbles.

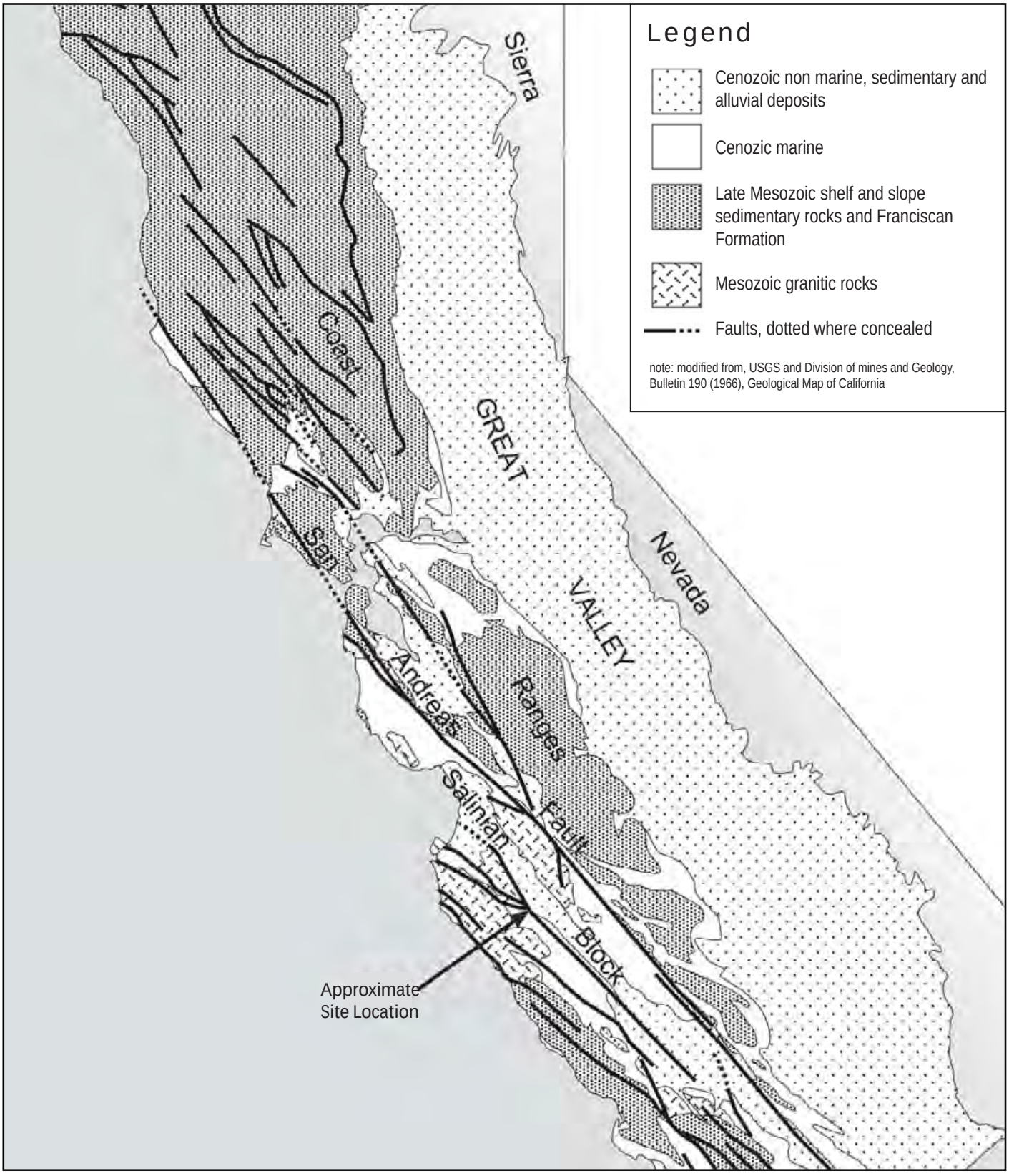
Because of the variability of geologic materials found on the project site, multiple soil classifications could be applied. The ridges and slopes underlain by Tierra Redonda

Formation (Tt) could be classified as soil type SC (very dense soil and soft rock). Alluvium in Indian Valley could be classified as SC / SD (very dense soil and soft rock/stiff soil profile). In the alluvium high groundwater conditions and low blow counts were encountered. These soils are given soil type SE (soft soil profile). A majority of the development of the project site is proposed to occur in soil type SE. For this reason, the soil type for the project site appears to be SE as defined by the guidelines in the California Building Code (CBC). As per Chapter 16, Section 1636.2, the SE is classified as having an average shear wave velocity of less than 180 m/sec.

The upland sloped areas of the project site are mapped as Tertiary Tierra Redonda Formation (Tt). The upper elevations of the northwest corner of the project site are mapped as Mesozoic or older Schist (ms). Also mapped in the northwest corner of the project site is an unnamed fault juxtaposing schist and Unnamed Red Beds. The fault is buried by Quaternary Older Fan Gravels (Qog) at the northern central border of the project site. South of the unnamed fault a large Quaternary landslide (Qls) is mapped. The low lying valley portions of the Site, Paraiso Springs Valley and Indian Valley are mapped as Quaternary Older Alluvium (Qoa). In the center of the project site, a small outcrop of Mesozoic basement rock (gdx) is mapped.

A description of the project site rock layers and layering is included below.

- **Fill (Hf):** Man made fill deposits consisting of unconsolidated to semi-consolidated sand, silt, clay, and gravel. Fill deposits are found in many areas of the project site where previous grading has occurred;
- **Landslide Deposits (Qyls)**: Recent landslide deposits, mostly occurring in the steeper slopes of the Tierra Redonda Formation (Tt). Deposits consist of unconsolidated sand silt and clay. These deposits are found flanking the project site drainages where steep slopes are present;
- **Debris Flow (Qydf)**: Recent debris flow deposits, mostly occurring in the Tierra Redonda Formation (Tt). Deposits consist of unconsolidated sand silt and clay. These deposits are found flanking the project site drainages where steep slopes are present;
- **Older Debris Flow (Qodf)**: Older debris flow deposits, mostly occurring in the Tierra Redonda Formation (Tt). Deposits consist of unconsolidated sand, silt, and clay. These deposits are found flanking the project site drainages where steep slopes are present;
- **Alluvium (Qal 1)**: Unconsolidated to semi-consolidated sand, silt, gravel, and cobbles. Qal 1 is found in the upper reaches of Paraiso Springs and Indian Valleys and is coarser grained and younger than alluvial deposits to the east (Qal 2);
- **Alluvium (Qal 2)**: Unconsolidated sand, silt, and trace gravel. Qal 2 is found in the eastern portions of Paraiso Springs and Indian Valleys. Qal 2 is finer grained and older than alluvial deposits to the west;



Source: RBF Consulting 2010, , LandSet Engineers 2004

Figure 3.6-1

Regional Geology

Paraiso Springs Resort EIR

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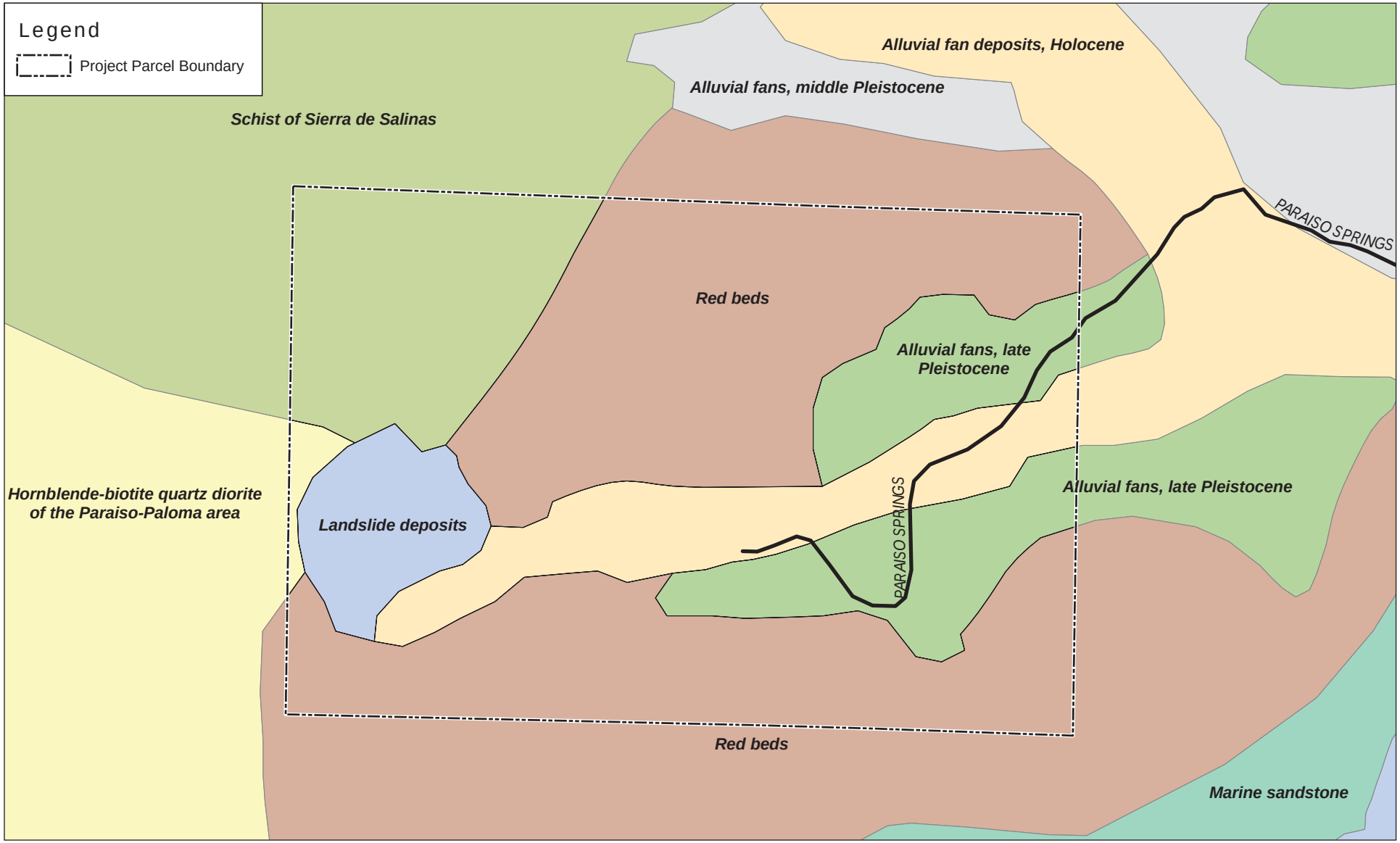

Source: RBF Consulting 2010, Monterey County, ESRI Data and Maps/StreetMap USA 2002

Figure 3.6.2

Site Geology

Paraiso Springs Resort EIR

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- **Older Landslide (Qols)**: Older landslide deposits consisting of unconsolidated to semi-consolidated boulders and cobbles supported by a sand and clay matrix. Clasts[10] are of Sierra De Salinas Schist (ms) and granitic (Kgd) provenance. Located in the southwest corner of the project site the slide buries Tierra Redonda deposits on the existing road;
- **Older Alluvium (Qoa)**: Older alluvial deposits consisting of unconsolidated to semi-consolidated cobbles and boulders. Older alluvial deposits are located in upper elevations of the northwest quarter of the project site;
- **Tierra Redonda Formation (Tt)**: Marine sandstone, conglomerate and some mudstone. Deposits consist of slightly cemented fine to coarse grained, subangular to subrounded sand with subrounded to subangular fine to coarse gravels up to six inches in diameter. Sands and gravel clasts are composed of reworked granitic basement rock and Sierra De Salinas Schist. Deposits of Tierra Redonda are found flanking the project site on the north and south sides;
- **Granitic Basement Rock (Kgd)**: Hornblende granodiorite with phenocrysts of feldspar. Kgd crops out in the central portion of the site; and
- **Sierra De Salinas Schist (ms)**: Biotite schist of the Salinian Block. This unit is found in the upper elevations of the northwest corner of the project site, west of the unnamed fault.

Faults and Seismic Hazards

The project site is located in the seismically-active Monterey Bay region of the Coast Ranges Geomorphic Province. The closest faults that would most likely affect the project site are the San Andreas, Rinconada, San Gregorio-Palo Colorado, and Monterey Bay Tularcitos faults (Figure 3.6-3, Regional Faults).

San Andreas Fault

The San Andreas Fault is located approximately 30 kilometers (km) northeast of the project site and is a major seismic hazard in northern California. This fault is a major right-lateral strike-slip fault that generally delineates the transform plate boundary between the North American and Pacific Plates. Trending to the northwest southeast, the San Andreas Fault is nearly vertical as evidenced by the relatively straight outcrop pattern across topography of noticeable relief. Historic earthquakes on the San Andreas Fault have caused extensive damage and very strong ground shaking in Monterey County. The 1906 (approximate magnitude 8.0) “San Francisco earthquake” ruptured a portion of the active San Andreas Fault from approximately San Juan Bautista to Cape Mendocino, causing severe damage in parts of the Monterey-San Francisco Bay area. The earthquake occurred on April 18, 1906 and caused severe ground shaking and structural damage to buildings in Monterey and San Benito Counties. The 1989 (approximate magnitude 7.1) Loma Prieta earthquake also caused significant damage in the Monterey Bay area.

[10] Clastic sedimentary rocks are rocks composed predominantly of broken pieces or clasts of older weathered and eroded rocks (Wikapedia 2008).

Rinconada Fault

The Rinconada Fault is located approximately 1.5 km east of the project site and is a major structural feature along which granitic rocks of the Sierra de Salinas Foothills were uplifted to form the western border of the Salinas Valley. Located within what is now called the Salinian Block, movement along this fault originally began during early Cenozoic time (Paleocene) and remained active to late Pleistocene time. The Rinconada Fault is primarily a right lateral strike slip fault. The slip rate for the Rinconada Fault is estimated at 1.0 mm/yr. Maximum magnitude is expected to be 7.5 with a recurrence interval of 1,764 years.

San Gregorio – Palo Colorado Fault

The San Gregorio (Sur Region) is the closest segment, located offshore about 24-km southwest of the project site. The San Gregorio Fault is part of the San Andreas Fault system and is expressed as a complex series of en echelon right lateral strike slip faults (i.e., San Gregorio, Palo Colorado, San Simeon, and Hosgri faults) in the offshore and nearshore environments. The San Gregorio and related faults are several hundred kilometers long extending from the Santa Barbara Channel in the south, to its juncture with the San Andreas Fault near Bolinas Bay in the north. The slip rate for the San Gregorio fault (Sur region) is estimated at 3.0mm/yr. Maximum magnitude is expected to be (M7.0) with a recurrence interval of 411 years.

Monterey Bay-Tularcitos Fault

The Monterey Bay-Tularcitos Fault is located approximately 12.6 km northwest of the project site and is a complex series of northwest trending faults that include the Chupines and Navy faults and is bounded on the west by the San Gregorio Fault and on the east by the San Andreas Fault.The Monterey Bay-Tularcitos Fault zone is 84 km long and extends from the upper Carmel Valley to the offshore environment within the Monterey Bay. The Monterey Bay Fault is the offshore extension of the Tularcitos Fault and comprises a discontinuous series of en echelon faults in the inner Monterey Bay between Monterey and Santa Cruz. While the Tularcitos Fault is considered to be active, the Monterey Bay Fault only has a few known locations that appear to displace Holocene sediments. The estimated slip rate, maximum magnitude, and recurrence interval for Monterey Bay-Tularcitos Fault is 0.5mm/yr, M7.1, and 2,841 years, respectively

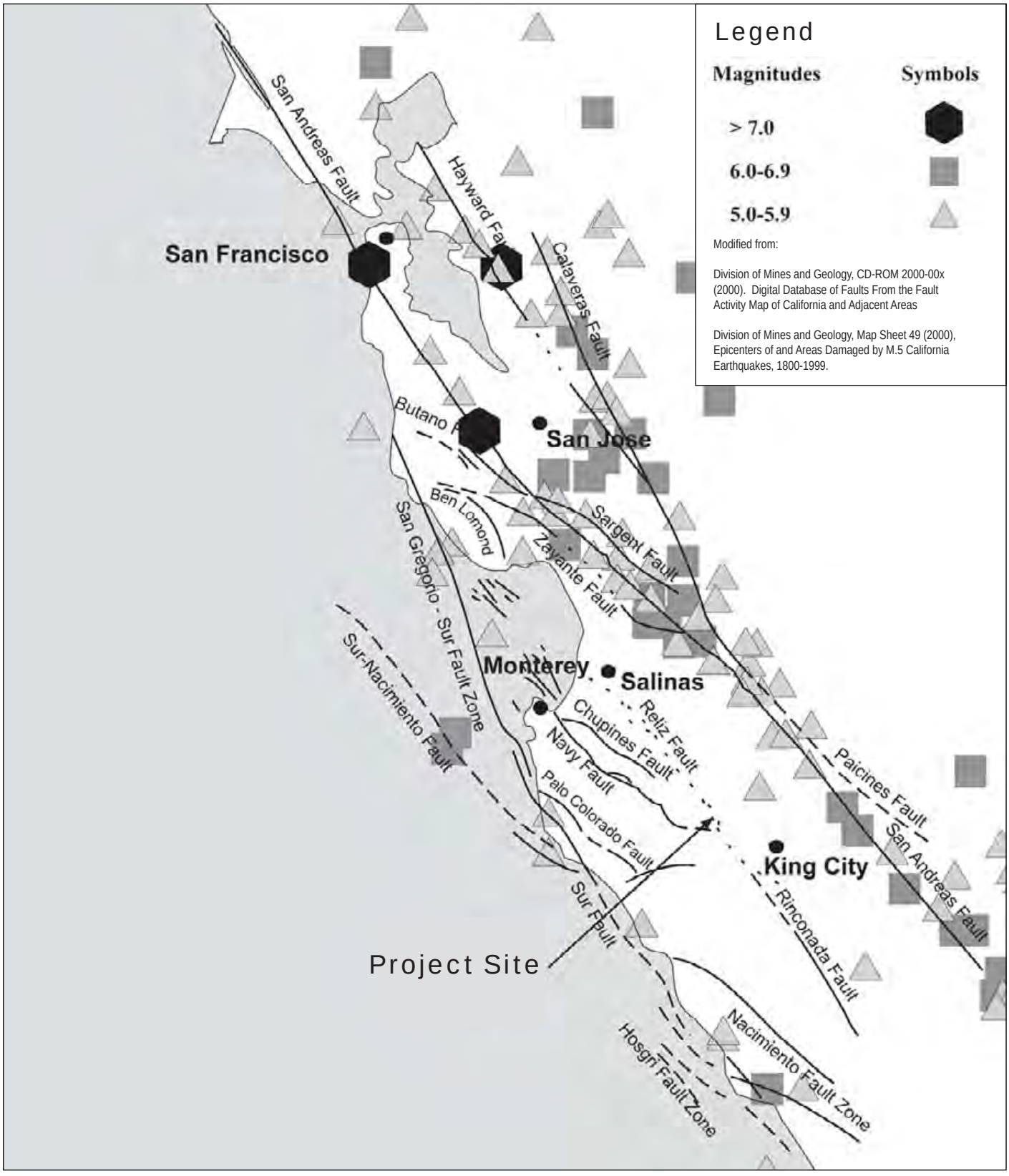
Groundfailure

Seismically induced ground failure is a result of strong ground motions generated by earthquakes. These types of failures include liquefaction, lateral spreading, dynamic compaction, and seismically induced landslides.

Figure 3.6-4, Relative Geologic Hazards, illustrates those areas with low to high geologic hazard potential and the corresponding type of hazard.

Liquefaction, Lateral Spreading and Dynamic Compaction

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



Source: RBF Consulting 2010, LandSet Engineers 2004

Figure 3.6-3

Regional Faults

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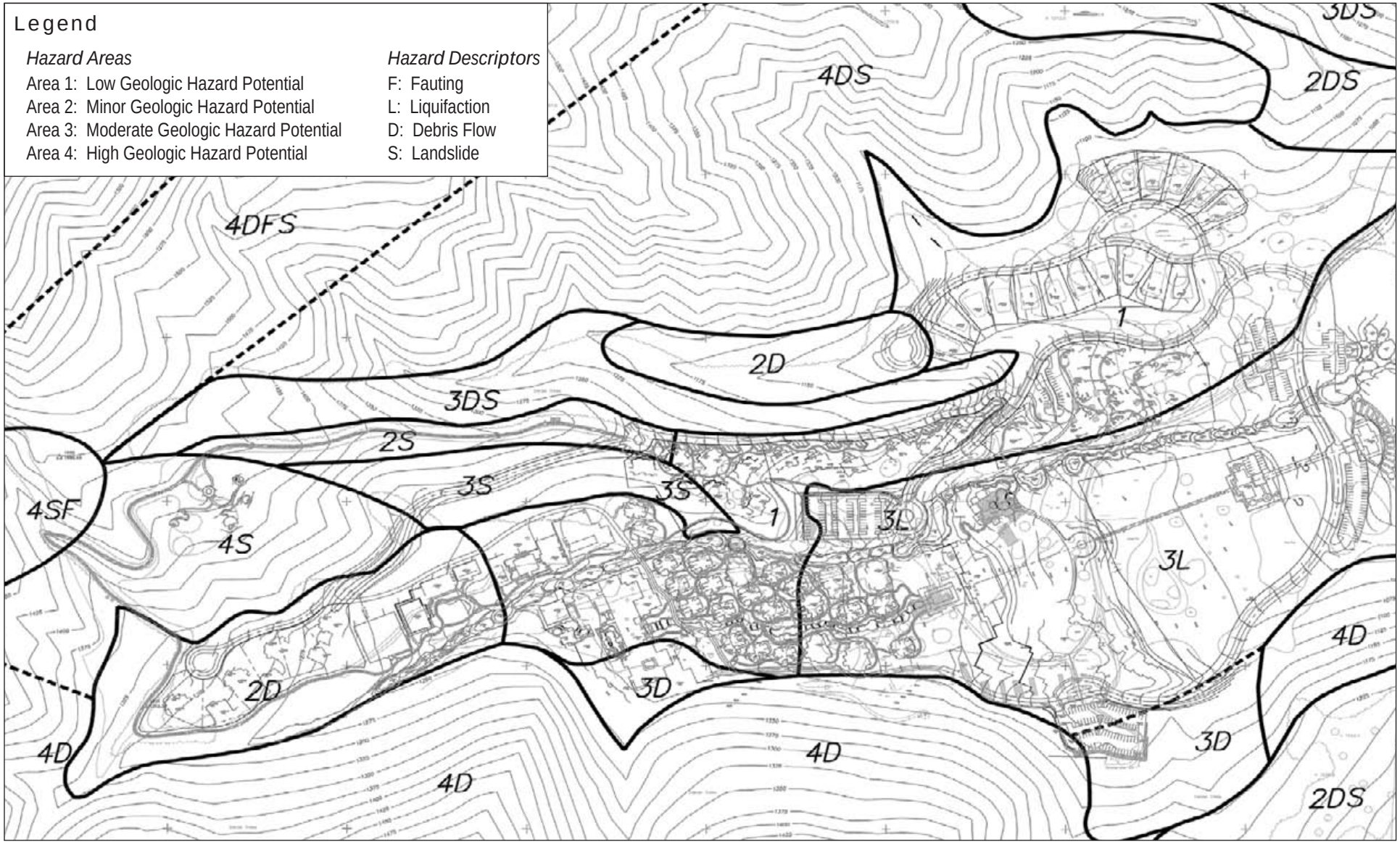

Source: RBF Consulting 2010, LandSet Engineers 2004

Figure 3.6-4
Relative Geologic Hazards
Paraiso Springs Resort EIR

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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.

As part of the Landset Engineers soil engineering analysis (Landset 2004), 29 exploratory borings were drilled on the project site. The exploratory borings were drilled to depths ranging from 5.5 to 60.0 feet below the ground surface.

Data collected from exploratory borings were used to evaluate the liquefaction potential of the project site using the "Liquefy 2"computer program developed by Thomas F. Blake. Each boring which encountered ground water, namely borings 1, 3, 5, 7, 9, 11, 13, 17, 23, was evaluated using a peak ground acceleration of 0.47g, and a maximum magnitude earthquake of 7.5. Of the nine borings evaluated, only boring B-23 had a factor of safety greater than 1.0 for the entire depth of the boring, indicating a high potential for liquefaction. Accordingly, Zone 3L, as identified on Figure 3.6-4, Relative Geologic Hazards, was identified as having a high potential for liquefaction and dynamic compaction (Landset 2004).

Landsliding and Slope Stability

The primary concern of slope stability is the susceptibility of a slope to slides, (i.e., a mass movement process in which slope failure occurs along one or more slip surfaces and in which the unit generally disintegrates into a jumbled mass en route to its depositional site). Examples of this are often found in hillsides where debris flows may occur if enough water precipitates during a storm event, soaks into the ground surface, and causes one soil layer to slip across another underneath it. However, slopes of any kind may be susceptible to failure. While the slopes within the project site along the valley bottom are fairly gentle, existing terrain surrounding this area range from moderately to very steep, and are likely susceptible to failure.

Past landsliding on the project site consists of debris avalanche and small rock slump type failures and are mainly located in the Tierra Redonda Formation (Tt). In general, these slope failures are found on the steep northern slopes of Indian Valley, the steep southern slopes of Paraiso Springs Valley, and the northwestern slope of the western extent of Paraiso Springs Valley.

Slope failures along the north slope of Indian Valley are of the debris avalanche (Qydf and Qodf) and small rock slump (Qyls) type. The debris avalanche failures (Qydf) are relatively young in age and are expressed as elongate, shallow failures that expose unvegetated bedrock. Older debris flow avalanche failures (Qodf) are also expressed as elongated, shallow failures, but show vegetative regrowth and softening of geomorphic features. The rock slump failures (Qyls) in this area are expressed as lobate, shallow failures with rotated, intact blocks. Since these failures lack regrowth in their scarp area, they are considered to be recent.

Landsliding on the southern slopes of Paraiso Springs Valley consist entirely of the debris avalanche (Qydf and Qodf) type. Slope failures in this area are more extensive than those of Indian Valley in width and depth. Debris avalanches have occurred as recently as March 1995. Located on steep vegetated slopes, these events followed heavy rains for multiple days and deposited approximately 0.5 to 1.0 foot of mud and sand on the valley floor.

A large, old debris slide (Qols) is mapped in the southwestern portion of the Site. This slide is approximately 800 feet wide and a minimum of 100 feet thick. Made up of broken up rocks from the Sierra De Salinas Schist (ms) and granitic basement (Kdg), this slide buries Tierra Redonda Formation (Tt) rock and an unnamed fault that crosses the northwestern corner of the project site.

Figure 3.6-4, Relative Geologic Hazards, identifies areas with high geologic hazard potential associated with landslides and debris flow as Zone 4DS and 4DFS.

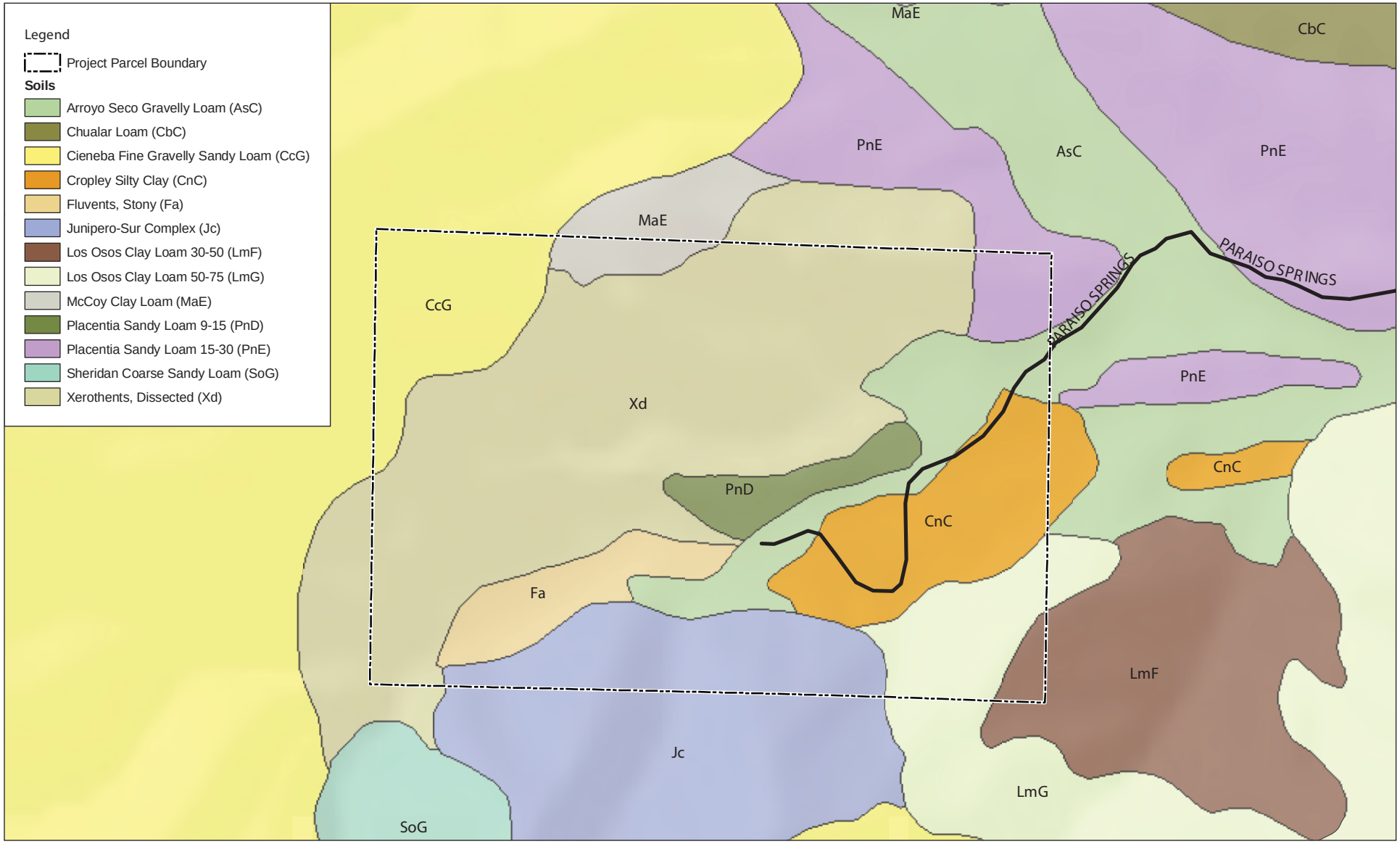
Soils

According to the *Soil Survey of Monterey County* (USDA NRCS 1978), the project site contains 11 different soil types. These soil types are shown in Figure 3.6-5, Site Soils.

- Arroyo Seco gravelly sandy loam, 5 to 9 percent slopes (AsC)
- Cieneba fine gravelly sandy loam, 30 to 79 percent slopes (CcG)
- Cropley silty clay, 2 to 9 percent slopes (CnC)
- Fluvents, stony (Fa)
- Junipero-Sur Complex (Jc)
- Los Osos clay loam, 30 to 50 percent slopes (LmF)
- Los Osos clay loam, 50 to 75 percent slopes (LmG)
- McCoy clay loam, 15 to 30 percent slopes (MaE)
- Placentia sandy loam, 9 to 15 percent slopes (PnD)
- Placentia sandy loam, 15 to 30 percent slopes (PnE)
- Xerorthents, dissected (Xb)

These soil types are described below:

Arroyo Seco gravelly sandy loam, 5 to 9 percent slopes (AsC). The Arroyo Seco gravelly sandy loam series consists of deep well-drained alluvium derived from igneous rock. These soils lie on alluvial fans and have 5 to 9 percent slopes. Typical profile for this soil is grayish brown gravelly sandy loam from 0 to 29 inches, brown gravelly sandy loam from 29 to 42 inches, and yellowish brown very gravelly coarse sandy loam from 42 to 60 inches. This soil typically harbors annual grasses and forbes with scattered oaks when uncultivated. This soil is typically used mainly for irrigated row and field crops. Some areas are used for orchards and vineyards. Runoff is slow and the erosion hazard is slight.



Source: RBF Consulting 2010, Natural Resource Conservation Service 2002

Figure 3.6-5
Soils at the Project Site

Paraiso Springs Resort EIR

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Cieneba fine gravelly sandy loam, 30 to 79 percent slopes (CcG). The Cieneba fine gravelly sandy loam series is a somewhat excessively drained sandy and gravelly residuum derived from igneous and metamorphic rock. A representative profile for this series consists of pale brown gravelly loam from 0 to 10 inches and a reddish yellow and brown weathered granitic material from 10 to 30 inches. This soil is typically used for wildlife, recreation, and incidental grazing. Runoff of this soil is very rapid and the erosion hazard is very high.

Cropley silty clay, 2 to 9 percent slopes (CnC). The Cropley silty clay soil is deep, well drained soil on alluvial fans and terraces formed in alluvium derived from sedimentary rock. A representative profile for the series consists of very dark grey and black clay from 0 to 36 inches and dark grayish brown clay 36 to 60 inches. This soil is typically used for irrigated row crops, apricots, prunes and dry pastures. Erosion is slow and the erosion hazard is minimal.

Fluvents, stony (Fa). The Fluvents soil consists of deep somewhat excessively drained soil. These soils lie in floodplains and consist of stratified cobbly sand to sandy loam. Runoff ranges from medium to very slow and the erosion hazard is moderate in some areas because of channeling and deposition.

Junipero-Sur Complex (Jc). The Junipero-Sur Complex is a well drained coarse-loamy residuum derived from metamorphic and igneous rock. A representative soil profile for this soil consists of a dark grayish brown sandy loam from 0 to 15 inches, a layer of brown gravelly sandy loam from 15 to 30 inches, and yellowish brown quartzmica schist from 30 to 40 inches. This soil is used for recreation and as wildlife habitat. Runoff is very rapid and the erosion hazard is very high.

Los Osos clay loam, 30 to 50 percent slopes (LmF). The Los Osos clay loam soil is a well drained fine loamy residuum weathered from metamorphic and sedimentary rock. A typical soil profile for this series consists of brown loam from 0 to 14 inches, yellowish brown clay from 14 to 24 inches, light yellowish brown clay loam from 24 to 32 inches, pale yellow sandy loam from 32 to 39 inches and yellowish brown sandstone from 39 to 43 inches. This soil is used mostly for range. Runoff is rapid and the erosion hazard is high.

Los Osos clay loam, 50 to 75 percent slopes (LmG). This soil is similar to the Los Osos clay loam with 30 to 50 percent slopes. Slopes on this soil are mostly 60 percent. Runoff is rapid and the erosion hazard is high.

McCoy clay loam, 15 to 30 percent slopes (MaE). McCoy clay loam is a well drained, fine loamy residuum weathered from metamorphic and igneous rock. The typical McCoy series profile consists of dark brown loam from 0 to 2 inches underlain by dark brown clay loam from 2 to 4 inches, a dark brown clay loam layer from 4 to 22 inches, dark yellowish brown clay loam from 22 to 27 inches and weathered granodiorite from 27 to 37 inches. This soil is used mostly for range. Runoff is medium and the erosion hazard is moderate.

Placentia sandy loam, 9 to 15 percent slopes (PnD). The Placentia sandy loam series are deep well drained soils on stream terraces formed in alluvium derived from igneous and metamorphic rock. A representative profile for the series consists of brown sandy loam from 0 to 13 inches, dark reddish brown clay from 13 to 29 inches, reddish brown heavy clay loam from 29 to 36 inches, a strong brown sandy clay loam from 36 to 58 inches and a strong brown gravelly sandy loam from 58 to 60 inches. This soil is used for citrus, truck crops, small grain, hay, and forage. Runoff is slow and the erosion hazard is slight.

Placentia sandy loam, 15 to 30 percent slopes (PnE). This series description and profile is the same as Placentia sandy loam, 9 to 15 percent slopes, but is located on steeper slopes. Runoff is rapid and the erosion hazard is high.

Xerorthents, dissected (Xb). The Xerorthents series are well drained mixed unconsolidated alluvium on alluvial fans and terraces. The soil is typically clay loam throughout the profile. Runoff is rapid or very rapid and the erosion hazard is high or very high.

Erosion

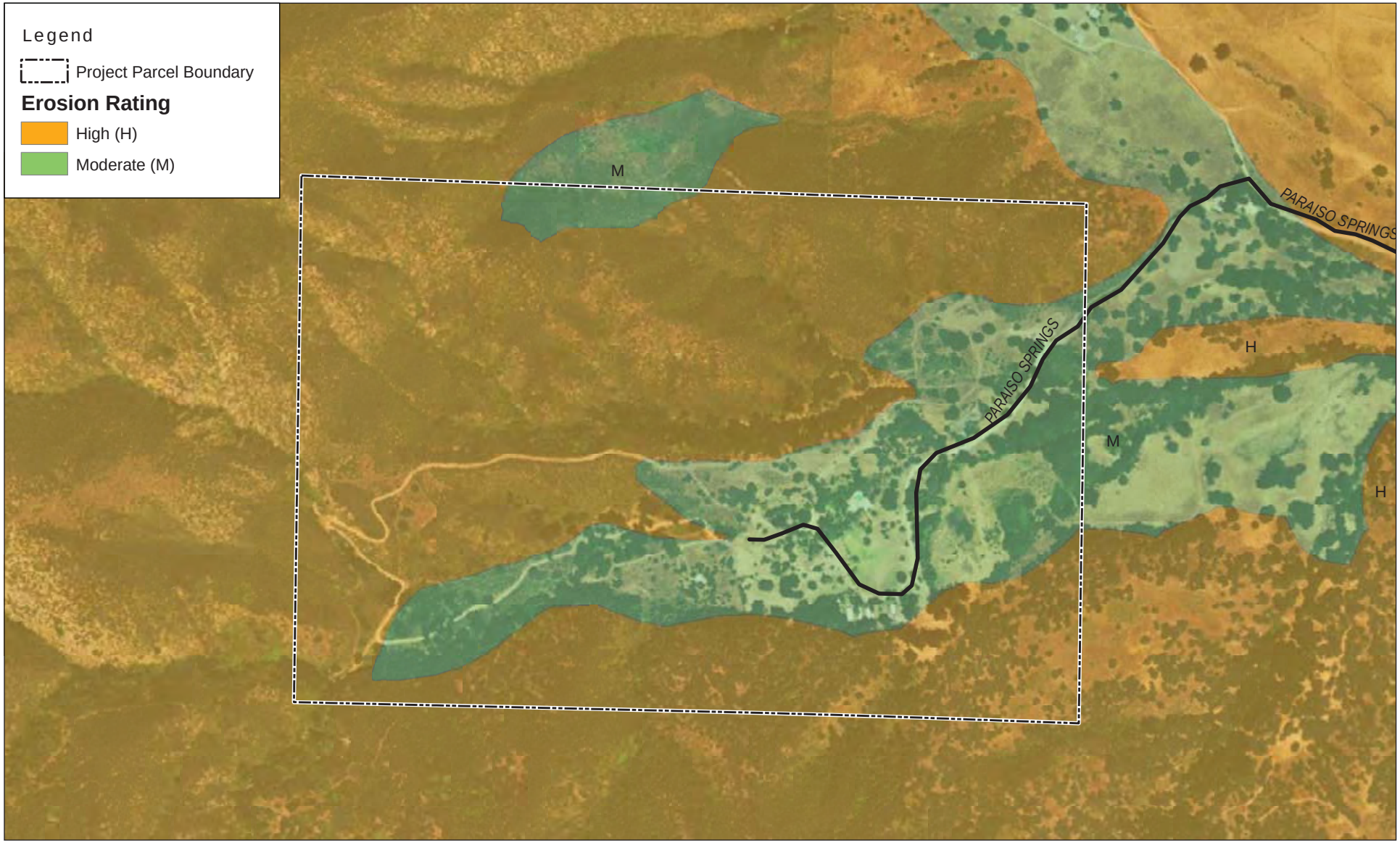
According to the *Monterey County Soil Survey* (U.S. Department of Agriculture, 1978), the following soils are rated as having rapid or very rapid runoff and erosion hazards: Cieneba fine gravelly sandy loam, 30 to 79 percent slopes (CcG); Junipero-Sur Complex (Jc); Los Osos clay loam, 30 to 50 percent slopes (LmF) and 50 to 75 percent slopes (LmG); Placentia sandy loam, 15 to 30 percent slopes (PnE); and Xerorthents, dissected (Xb). These soil map units with high erosion hazards are shown in Figure 3.6-6, Soil Erosion Hazards at the Project Site.

Expansive Soils

Expansive soils shrink and swell with moisture content. This shrink swell feature of expansive soils can cause distress and damage to structures. According to the *Monterey County Soil Survey* (U.S. Department of Agriculture, 1978), the Cropley silty clay, 2 to 9 percent slopes (CnC); Los Osos clay loam, 30 to 50 percent slopes (LmF); Los Osos clay loam, 50 to 75 percent slopes (LmG) have a high shrink swell potential. The McCoy clay loam soil has a moderate shrink swell in the first 18 inches and high in the remaining. The Placentia sandy loam soils have low shrink swell potentials in the first 13 inches and high in the remainder.

Flood Hazards

According to the National Flood Insurance Program Map (Federal Emergency Management Agency (FEMA 2009), the project site is not located within a special flood hazard area. However, flooding of the project site did occur in March of 1995 as a result of channeling the drainage into a culvert of insufficient diameter. Debris in the form of brush, rocks, and sediment clogged the culvert and caused the drainage to overflow, resulting in significant damage to the road and pools at lower elevations.



Source: RBF Consulting 2010, Monterey County 2006

Figure 3.6-6
Soil Erosion Hazards at the Project Site
Paraiso Springs Resort EIR

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3.6.3 Regulatory Background

State

Alquist Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. This State law was a direct result of the 1971 San Fernando earthquake, which was associated with extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures. The Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act addresses only the hazard of surface fault rupture, and is not directed toward other earthquake hazards.

Seismic Hazards Mapping Act

Prompted by damaging earthquakes in northern and southern California, in 1990 the State Legislature passed the Seismic Hazards Mapping Act. The purpose of the Act is to protect public safety from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and other hazards caused by earthquakes. The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act (which addresses only surface fault-rupture hazards) and are outlined below:

The State Geologist is required to delineate the various "seismic hazard zones."

Cities and counties, or other local permitting authority, must regulate certain development "projects" within the zones. They must withhold the development permits for a site within a zone until the geologic and soil conditions of the site are investigated and appropriate mitigation measures, if any, are incorporated into development plans.

The State Mining and Geology Board provide additional regulations, policies, and criteria, to guide cities and counties in their implementation of the law. The Board also provides guidelines for preparation of the Seismic Hazard Zone Maps (refer to Special Publication 118, Recommended Criteria for Delineating Seismic Zones in California, CGS) and for evaluating and mitigating seismic hazards (refer to Special Publication 117, Guidelines for Evaluation and Mitigating Seismic Hazards in California, CGS).

Sellers (and their agents) of real property within a mapped hazard zone must disclose that the property lies within such a zone at the time of sale.

Uniform Building Code

The regulatory environment for the design and construction industries consists of building codes and standards covering local, state, federal, land use and environmental regulations. Building codes and standards are developed specifically for the purpose of regulating the life-safety, health and welfare of the public with respect to building construction and maintenance. Once adopted, building codes become law.

The Uniform Building Code (UBC) was first enacted by the International Conference of Building Officials (ICBO) on October 18-21, 1927. The Uniform Building Code was the

model code used within the adopted California Building Code (CBC). In 1994 the International Code Council (ICC) was established which folded all three national code organizations under one group, including the International Conference of Building Officials (ICBO). This organization (ICC) merged and standardized all three national model building codes into one single code titled the "International Building Code" often referred to as the IBC. California first adopted by reference the 2006 IBC into the 2007 California Building Code (CBC) which was first in effect in January of 2008. The IBC is revised and published every three years as was the old Uniform Building Code. The IBC is currently adopted and used by all 50 states and the Federal Government as the governing codes for construction. The CBC is also published every three years and incorporates by reference the IBC with additional specific State amendments which are determined by the California Building Standards Commission. California, including Monterey County currently uses the 2010 California Building Code, which includes the 2009 International Building Code, as the governing code for all construction. This code will expire at the end of this year, and will be replaced by the 2013 CBC, which we will be formally adopting later this year. The 2013 CBC will include by reference the 2012 IBC with further amendments developed by the Building standards Commission. Mark Setterland, Deputy Building Official, County of Monterey, March 2013.

California Building Code

California Code of Regulations Title 24, also known as the California Building Standards Code, is a compilation of three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes;
- Building standards that have been adopted and adapted from the national model code standards to meet California conditions; and
- Building standards, authorized by the California legislature, that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns.

Title 24 applies to all applications for building permits. It consists of 12 parts that contain administrative regulations for the California Building Standards Commission and for all state agencies that implement or enforce building standards. Local agencies must ensure the development complies with the guidelines contained in the CBC, which is one of the parts of Title 24. Cities and counties have the ability to adopt additional building standards beyond the State CBC.

Local

Monterey County General Plan

Goals, Objectives and Policies regarding Environmental Constraints to development, including seismic and other geologic hazards, are found in Chapter II of the Monterey County General Plan (1982). Goal 15 aims to "Minimize loss of life, injury, damage to property, and economic and social dislocations resulting from seismic and other geologic hazards." Listed below are policies that achieve this goal:

Policy 3.1.1 Erosion control procedures shall be established and enforced for all private and public construction and grading projects.

Policy 3.2.2 Land having a prevailing slope above 30 percent shall require adequate special erosion control and construction techniques.

Policy 15.1.2 Faults classified as "potentially active" shall be treated the same as "active faults" until geotechnical information demonstrating that a fault is not "active" is accepted by the County.

Policy 15.1.3 The lands within one eighth mile of active or potentially active faults shall be treated as a fault zone until accepted geotechnical investigations indicate otherwise.

Policy 15.1.4 All new development and land divisions in designated high hazard zones shall provide a preliminary seismic and geologic hazard report which addresses the potential for surface ruptures, ground shaking, liquefaction and landslides before the application is considered complete. This report shall be completed by a registered geologist and conform to the standards of a preliminary report adopted by the County.

Policy 15.1.5 A detailed geological report shall be required for all standard subdivisions. In high hazard areas, this report shall be completed by a registered geologist, unless a waiver is granted, and conform to the standards of a detailed report adopted by the County.

Policy 15.1.8 The County should require a soils report on all building permits and grading permits within areas of known slope instability or where significant potential hazard has been identified.

Policy 15.1.11 For high hazard areas, the County should condition development permits based on the recommendations of a detailed geological investigation and soils report.

Central Salinas Valley Area Plan

The *Central Salinas Valley Area Plan* (Monterey County 1987*)* contains the following policy which is applicable to the proposed project:

15.1.1.1 (CSV) The Central Salinas Valley Seismic Hazard Map shall be used to delineate high seismic hazard areas addressed by the Countywide General Plan. Areas shown as moderately high, high, and very high hazards shall be considered as “high hazard” areas for the purpose of applying General Plan policies. The map may be revised when accepted geotechnical information becomes available.

Monterey County Ordinance

The County of Monterey grading ordinance generally regulates grading involving more than 100 cubic yards of excavation and filling. Minor fills and excavations (cuts) of less

than 100 yards that are not intended to provide foundation for structures, or that are very shallow and nearly flat, are typically exempt from the ordinance, as are shallow footings for small structures. Submittal requirements for a County grading permit include site plans, existing and proposed contour changes, an estimate of the volume of earth to be moved, and geotechnical (soils) reports. Projects involving grading activities over 5,000 cubic yards must include detailed plans signed by a State-licensed civil engineer.

Grading is not allowed to obstruct storm drainage or cause siltation of a waterway. All grading requires that temporary and permanent erosion control measures be implemented. Grading within 50 feet of a watercourse, or within 200 feet of a river, is regulated in the Zoning Code Floodplain regulations. Work in the Salinas River and Arroyo Seco River channels is exempted if it is covered by a U.S. Army Corps of Engineers five-year regional 404 permit, approved by the California Department of Fish and Wildlife, and approved by the Monterey County Water Resources Agency.

3.6.4 Analytical Methodology and Significance Threshold Criteria

Methodology

The geotechnical report was based on previous studies, review of existing literature, field surveys, and data analysis. The literature review focused on existing topographical maps, reports of subsurface explorations, and ongoing available research performed on or adjacent to the project site.

The project site was mapped in the field on August 10, 11, and 12, 2004 on the aerial topographic map. Subsurface explorations were made using 29 exploratory borings drilled in August 2004. The exploratory borings were drilled to depths ranging from 5.5 to 60.0 feet below the ground surface. Soils encountered in each test boring were visually classified in the field and a continuous log was recorded. Visual classifications were made in general accordance with the Unified Soil Classification System and ASTM D2487.

Laboratory tests were performed to determine some of the physical and engineering characteristics of selected soil samples considered pertinent to the design of the proposed project. The tests performed were selected on the basis of the probable design requirements as correlated to the subsurface profile of the project site. The laboratory tests aided in determining soil characteristics, such as compaction, expansive potential and grain size distribution.

Significance Threshold Criteria

As stated in Appendix G of the *CEQA Guidelines* a project would be considered to have a significant impact related to geology, soils, seismicity, and landforms and topography if it would:

- 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.
  - Landslides.
- Result in 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 proposed project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
- Be located on expansive soil, as defined the Uniform Building Code, creating substantial risks to life or property.
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Impact Analysis

Fault Rupture

Rupture along faults can cause offset of the ground surface along the surface trace of the fault. The offset can damage roads and buildings and can break pipes or other underground utilities.

The closest earthquake fault zone to the project site is the San Andreas Fault, located 30-km to the northeast. The California Division of Mines and Geology has classified the San Andreas Fault (Creeping segment) as a Type A Fault. The San Andreas Fault Creeping segment can expect magnitude 6.2 earthquakes with an approximate 61 year recurrence interval. Stronger earthquakes could be experienced at the site similar to the 1906 event with a maximum magnitude of magnitude 7.9 with a recurrence interval of 210 years (Landset 2004).

However, according to the Geologic and Soil Engineering Feasibility Report prepared by Landset Engineering, a review of regional studies found inconclusive evidence regarding the likelihood of seismic activity from these faults. Based on the distance of the nearest faults to the project site, the proposed project would not expose people or property to ground rupture and no impact is expected. Therefore, the potential for ground surface rupture due to faulting is considered to be low and no mitigation is required

Surface Fault Rupture

Impact 3.6-1:	Seismic groundshaking at the site may occur during the next major earthquake on a regional fault system. Such shaking can cause severe damage to or collapse of buildings or other project facilities and may expose people to injury or death. Seismic shaking at the site presents a potentially significant impact. (Less than Significant Impact with Mitigation)

The proposed project would be constructed in a region of high seismic risk, but the site is not located within a California Earthquake Fault Zone. The incorporation of project elements that properly implement mitigation measures (i.e., compliance with the most stringent applicable seismic codes and implementation of the recommendations of the geological and geotechnical report for seismic safety) would further ensure that seismic groundshaking impacts are reduced.

The seismic shaking hazard is ubiquitous for this region, and typically presents a significant impact that can be mitigated to a less than significant level. Without mitigation, strong seismic shaking in the project vicinity could produce serious damaging effects to the proposed project. The effects of groundshaking on future planned structures and other improvements can be reduced by earthquake-resistant design in accordance with the latest adopted editions of the California Building Code. Even with adequate design and construction, some damage to structures may occur during a great earthquake. However, the damage due to high intensity shaking may be reduced by careful placement and construction of the structure. Past experience has shown that the quality of design and construction is far more important than the precise evaluation of ground motion parameters.

Many of the risks associated with earthquakes are not due to structural failure. Many injuries result from falling debris, overturned furniture, the disruption of utilities, and fires that occur as a result of broken utility lines, overturned gas stoves, and other hazards.

As a result, the proposed project may be exposed to some structural damage and associated human safety hazards due to stronger shaking. This would be considered a potentially significant impact. All structures within Monterey County, including the proposed project, are required to be designed in accordance with the latest edition of the California Building Code criteria for Seismic Zone IV. In addition, the following mitigation measure would reduce this impact to a less than significant level.

Mitigation Measures

MM 3.6-1a Prior to building permit approval, the project structural engineer shall provide a seismic design report for the project consistent with the most current version of the California Building Code, at a minimum. If other, more conservative design guidelines are determined to be applicable to the project, those design guidelines shall be followed.

Recommendations contained within the Geologic and Soil Engineering Feasibility Report, prepared by Landset Engineers (2004), shall also be referenced and incorporated as they provide specific recommendations regarding site preparation and construction of foundations, retaining walls, utilities, sidewalks, roadways, subsurface drainage, and landscaping features based on the lot characteristics and proximity to the fault at the project site. The seismic design report shall be submitted for plan check with any improvement plans including earthwork or foundation construction.

During the course of construction, the project applicant shall contract with a qualified engineering geologist to be on site during all grading operations to make onsite remediation and recommendations as needed, and perform required tests, observations, and consultation as specified in the seismic design. Prior to final inspection, the project applicant shall provide certification from the project structural engineer that all development has been constructed in accordance with all applicable geologic and geotechnical reports.

MM 3.6-1b Prior to occupancy of the proposed project, large appliances (i.e. refrigerators, freezers, pianos, wall units, water heaters, etc.), book shelves, storage shelves, and other large free-standing objects incorporated as part of the building design shall be firmly attached to the floor or to structural members of walls.

Implementation of mitigation measures MM 3.5-1a and -1b would ensure that potential, significant surface fault rupture impacts associated with the proposed project would be reduced to a less than significant level.

Dynamic Compaction

Impact 3.6-2:	Implementation of the proposed project may result in potential permanent structural damage and associated human safety hazards resulting from dynamic compaction. This is considered a potentially significant impact. (Less than Significant Impact with Mitigation)

Dynamic compaction occurs in unsaturated loose granular soil material or uncompacted fill soils, which results in ground settlement. The loose to medium density colluvial soils on the project site have a low to moderate potential to undergo ground settlement. Implementation of mitigation measure MM 3.6-1a would ensure that structures are developed on suitable soils. Therefore, this significant impact would be reduced to a less than significant level.

Liquefaction and/or Lateral Spreading

Impact 3.6-3:	Implementation of the proposed project may result in potential permanent structural damage and associated human safety hazards resulting from direct and indirect slope-failure related to hazards such as liquefaction and/or lateral spreading. This is considered a potentially significant impact. (Less than Significant Impact with Mitigation)

Liquefaction is the transformation of soil from a solid to a liquid state as a consequence of increased pore-water pressures, usually in response to strong ground shaking, such as those generated during an earthquake. Liquefaction most often occurs in Holocene age loose saturated silts, and saturated poorly graded fine-grained sands. However, some cohesive clay soils can be subject to strength loss even under relatively minor strains.

Based on borings conducted on the project site, Zone 3L as identified on Figure 3.6-4, Relative Geologic Hazards, was identified as having a moderate potential for liquefaction. This area includes proposed development of the Wastewater Treatment Facility, Nursery, Winery, Day Spa, Hamlet, Hotel, Conference Facilities and eastern portion of the Casitas.

Grading (cut and fill) can lead to unstable soils if not properly engineered. The proposed project includes grading of approximately two million square feet with cuts and fills essentially in balance. The fill heights range up to a maximum of approximately 14 feet, with the highest fills needed to construct the main hotel complex and adjacent Hamlet, and the roadway leading to the western-most cluster of condominiums. The dept of cuts generally are less than 10 feet throughout the site. However, deep cuts of up to 25 feet are required for the parking area south of the hamlet and the adjacent roadway. Significant retaining walls or upper slope benching will be required in this area. (CH2MHill 2005c, pages 1-2).

Lateral spreading is a potential hazard commonly associated with liquefaction. Lateral spreading causes ground cracking and settlement in response to lateral movement of the liquefied subsurface caused by liquefaction. Since the potential for liquefaction to occur on the project site is moderate, the potential for lateral spreading is also moderate.

Mitigation Measures

MM 3.6-3a Prior to issuance of a grading permit, the project applicant shall contract with a certified engineer to prepare a site-specific Supplemental Liquefaction Investigation prepared in accordance with the California Department of Mines & Geology Special Publication 117. The Supplemental Liquefaction Investigation shall include in its analysis the approved drainage plan. Engineering measures to protect development in this area could include structural strengthening of buildings to resist predicted ground settlement, utilization of post tension or mat slab foundations or a combination of such measures as recommended in the Geologic and Soil Engineering Feasibility Report prepared by Landset Engineering (2004). These improvements shall be included in the final improvement plans for the proposed project and installed concurrent with site preparation and grading activities associated with future development.

MM 3.6-3b Prior to issuance of a grading permit, the project applicant shall contract with a certified engineer to ensure that final grading plans include a slope stability analysis, particularly for the parking area near the hamlet and the adjacent roadway, to verify that the proposed cut and fill slopes are considered stable under both static and pseudo-static conditions.

MM 3.6-3c The Final Geologic and Soil Engineering Feasibility Report shall use the most-recent Building Code, which addresses new seismic design requirements for structures and the site soil profile as S_E should be reviewed again to confirm this designation is still appropriate for the project site.

Implementation of mitigation measures 3.6-1a and 3.6-3a, b and c would aid in reducing the potential for liquefaction and lateral spreading to occur by requiring compliance with California Department of Mines & Geology Special Publication 117 engineering measures, and the most recent Building Code requirements. Therefore, the impact would be reduced to a less than significant level.

Landslides and Slope Stability

Impact 3.6-4: Implementation of the proposed project may result in potential permanent structural damage and associated human safety hazards resulting from slope-failure hazards such as landslides. This is considered a potentially significant impact. (Less than Significant Impact with Mitigation)

The steep slopes underlain by the Tierra Redonda Formation that flank Paraiso Springs Valley and Indian Valley are very prone to slope failure and have a high geologic hazard risk potential for landside and debris flow and are shown as Zone 4SF, 4D, 4DS, and 4DFS in Figure 3.6-4, Geologic Hazard. Numerous debris avalanches and debris slides of varying ages are present on these slopes.

Proposed development in or proximate to these zones includes the following: western portion of the Fitness Facility southwestern, northwestern, and north-central portion of the Hillside Village Condominiums; and southern portion of the Casitas and Teahouse.

As part of the proposed project, the project engineer has identified a number of potential locations for the construction of debris basins to reduce landside and debris flow impacts to the proposed project (see Figure 3.6-7: Potential Debris Basin Locations). Although subbasin V-1 was identified as a potential site for debris flows, it is not anticipated that a debris basin would be needed at the point of concentration for this basin. The drainage channel was found to be well defined and relatively clear of debris.

As noted by the project engineer (CH2MHill 2010a), given the topography of the areas surrounding the project site, debris basins are intended to be a general term as it is not likely that large basins can be constructed on the hillsides. These debris basins would intercept debris flows/slides from the identified subbasins, above the developed areas of the project. They would be incorporated into the site grading footprint for the overall project. The debris basins are expected to include a series of two-to-four small soil and rock checkdams, approximately three-feet tall, constructed at the low flow line of the natural drainage feature. Minimal excavation behind the checkdams is planned and no additional trees would be removed for construction. The debris basins would be constructed adjacent to project roadways, parking lots and/or maintenance paths to facilitate inspection and maintenance (CH2MHill 2010a).

Furthermore, the proposed project would remove the culverts within the existing main drainage stream running through the middle of the project site and construct new stream crossings as bridges to better allow for the passage of debris without inducing flooding.

The location and design specifications for these “debris basin” facilities would be included as part of the final grading plans (CH2MHill 2010a).

A site investigation was conducted by Zinn Geology in December of 2007 as part of their CEQA-level peer review of the Soil Engineering Feasibility Report by Landset (2004). Zinn Geology observed the presence of angular schist boulders (very large rocks) and cobbles in the sandy matrix which is indicative of long transport distance from the bedrock outcrops upstream, as well as rapid deposition in a high velocity hydraulic environment (i.e. debris flows or debris torrents). It is likely that the schist boulders and cobbles traveled as far as 2,200 feet, via a hydraulic (water) flow regime that would be capable of moving boulders as part of a debris flow torrent.

Zinn Geology noted that more detail geological subsurface analysis is required to fully ascertain if the debris flow hazards on the valley floors, particularly in the Indian Valley area, to determine if proposed structures will be potentially subjected to a greater than ordinary risk from landslides and debris flows (Zinn Geology 2008a and b). The need for more geological subsurface analysis as part of detailed engineering design was confirmed by the project engineer (CH2MHill 2008).

Mitigation Measures

MM 3.6.4a Prior to issuance of a grading permit, the Project Geologist of Record (PGOR) shall work with the Geotechnical Engineer of Record and the Civil Engineer of Record to prepare a Final Geologic and Soil Engineering Feasibility Report. As part of this report, the PGOR shall:

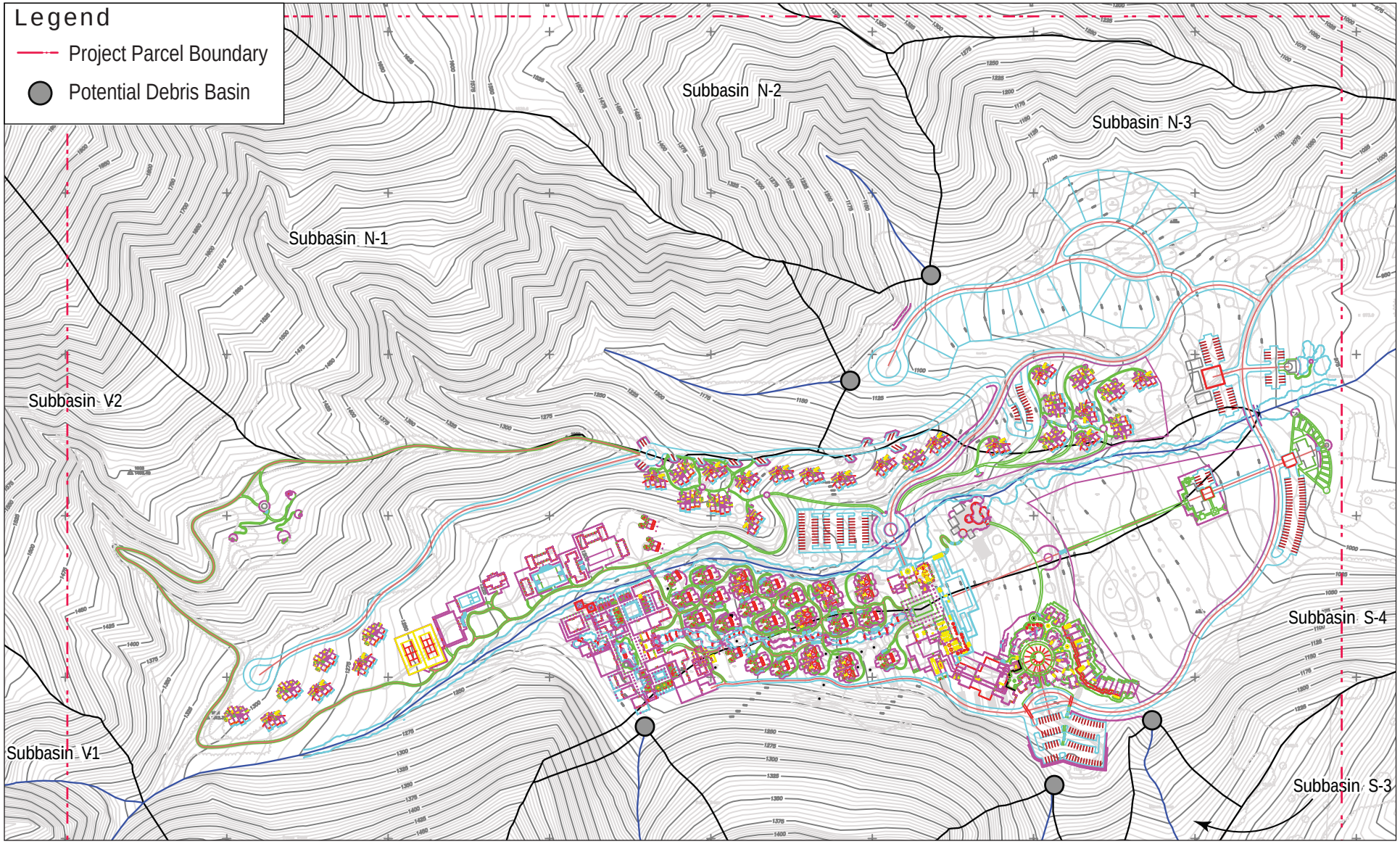
1. Further characterize the debris flow and debris torrent hazards and attendant risks to the proposed developments. The PGOR shall perform a detailed mapping and subsurface program that will characterize the mode of past transport for angular boulders and cobbles of schist bedrock within the sandy alluvial matrix on the valley floors. Further geological mapping shall include detailed mapping of individual debris flow scars, as well as run-out areas for the debris flow deposits. Subsurface work shall adequately characterize the depth and extent of individual debris flow/torrent events. Mode of transport characterization shall include volumes and velocities per debris flow/torrent event, substantiated by a detailed geological recordation of past events in and adjacent to the proposed development areas;

2. Prepare debris flow/torrent design volumes, velocities and runup heights where warranted, based upon the above-listed field work and analysis;

3. Plot their geological information upon the most current sub-division and grading maps and analyze the potential impacts to the proposed developments; and

4. Work with PGOR and Civil Engineer Of Record to jointly assess the impact that debris flows and debris torrents may have upon the performance of the proposed drainage improvements. The proposed drainage improvements should be protected from design debris flow and torrent events dictated by the PGOR, or the drainage improvements shall be designed to handle said debris flow or debris torrent events without triggering flooding of the proposed developments.

The PGOR shall coordinate their field work with the peer-reviewing Engineering Geologist, so as to allow them the opportunity to view the subsurface work while it is being performed and form an opinion as to the adequacy of the work at that time. The peer-reviewing Engineering Geologist shall also review the Final Geologic and Soil Engineering Feasibility Report. If the report is deemed inadequate by the peer-reviewing Engineering Geologist, they shall summarize the inadequate work and request that a supplemental investigation or analysis be performed. Any supplemental work performed by the PGOR as a result of review recommendations by the peer-reviewing Engineering Geologist shall also be subject to the conditions outlined above.



not to scale

Source: RBF Consulting 2010, CH2MHill 2005

Figure 3.6-7

Potential Debris Basin Locations

Paraiso Springs Resort EIR

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The Final Geologic and Soil Engineering Feasibility Report shall fully characterize the new design debris flow events to include site design-specific recommendations to ensure that the structures at risk would not collapse if said design debris flow occurs.

MM 3.6.4b At the time of construction of the project, all excavations shall be observed by the PGOR prior to backfilling of the excavation. A post-construction geologic map portraying the distribution of rock and soil should be constructed by the PGOR and submitted to the County of Monterey with a Final Geological Report. If previously unidentified debris flow deposits are mapped in the excavations during construction, additional mitigation measures shall be recommended at the time of construction by the PGOR.

Implementation of mitigation measures MM 3.6-4a and MM 3.6-4b would ensure that the potential for landslide is reduced to a less than significant level.

Short-Term and Long-Term Erosion

Impact 3.6-5: Implementation of the proposed project would result in temporary and long-term disturbance of soils with high erosion potential, which could increase the risk of accelerated erosion and adversely affect water quality. This is considered a potentially significant impact. (Less than Significant Impact with Mitigation)

Construction activities associated with the proposed project would occur on approximately 50 acres of the overall project site. Within the construction zone, existing gradients range from approximately 8 percent to an excess of 30 percent along the hillsides for the timeshare units and the hamlet parking area. The proposed project involves removal of vegetation and grading activities associated with the construction of roads, driveways, building pads, and associated infrastructure. The disturbance of soil during construction activities makes it susceptible to erosion by rainfall and wind.

The proposed project would also increase the amount of impervious surfaces, which may affect the natural drainage pattern within the project site. During unusually high rainfall over a short duration, excessive erosion may occur. Soil particles may be carried by storm water to receiving water bodies, including Arroyo Seco River which may result in sedimentation. According to the *Monterey County Soil Survey* (U.S. Department of Agriculture, 1978), the following soils within the project site are rated as having rapid or very rapid runoff and erosion hazards: Cieneba fine gravelly sandy loam, 30 to 79 percent slopes (CcG); Junipero-Sur Complex (Jc); Los Osos clay loam, 30 to 50 percent slopes (LmF) and 50 to 75 percent slopes (LmG); Placentia sandy loam, 15 to 30 percent slopes (PnE); and Xerorthents, dissected (Xb). Figure 3.6-6, Site Erosion, shows the portions of the project site that have a high erosion potential.

According to the project applicant's General Development Plan (2005), the proposed project includes the following erosion control measures during construction activities: construction vehicle access pads at the entrance to the project site along Paraiso Springs Road and at all access points off any constructed roadway; material hauling; construction material storage; dust control; construction vehicle maintenance and fueling; hazardous

materials storage; use of hay bales, straw mats, and waddles at new cut and fill slopes; hydroseeding of cut and fill slopes prior to rainy season; contractor employee training; settling basins for dewatering areas; and concrete truck wash out basins.

The removal and disturbance of soil during grading activities will directly affect the rate of erosion. Therefore, short- and long-term erosion potential at the project site would be considered a significant impact. Grading at the project site shall be in accordance with the Monterey County Ordinance 16.12.80, Land Clearing. All grading plans shall be subject to review by Monterey County Public Works Department and Monterey County Water Resources Agency. In addition, the following mitigation measure would reduce impacts from soil erosion within the project site:

Mitigation Measure

MM 3.6-5 Prior to grading permit issuance, the project applicant shall contract with a qualified consultant to prepare an erosion control plan and a Storm Water Pollution Prevention Plan (SWPPP) that documents best management practices (filters, traps, bio-filtration swales, etc.) to ensure that urban runoff contaminants and sediment are minimized during site preparation, construction, and post-construction periods. The erosion control plan and SWPPP shall incorporate best management practices consistent with the requirements of the National Pollutant Discharge Elimination System and Monterey County Ordinance 16.12.80, Land Clearing. The erosion and sediment control plan and the SWPPP shall be consistent with the standards set forth in the Construction General Permit.

Implementation of the above mitigation measure would reduce impacts from accelerated erosion to a less than significant level by requiring the project applicant prepare a SWPPP and implement an erosion control plan for the proposed project.

Soil Stability and Expansive Soils

Impact 3.6-6: The project site is not located in an expansive soil. Portions of the project site have high shrink swell/ expansion potential. This is considered a less than significant impact.

Expansive soils experience volumetric changes with changes in moisture content, swelling with increases in moisture content and shrinking with decreasing moisture content. These volumetric changes that the soil undergoes in this cyclic pattern can cause distress resulting in damage to concrete slabs and foundations. According to the *Monterey County Soil Survey* (U.S. Department of Agriculture, 1978), the following soils have high shrink swell potential: Cropley silty clay, 2 to 9 percent slopes (CnC); Los Osos clay loam, 30 to 50 percent slopes (LmF); and Los Osos clay loam, 50 to 75 percent slopes (LmG). In addition, the McCoy clay loam soil has a moderate shrink swell in the first 18 inches and high in the remaining and the Placentia sandy loam soils have low shrink swell potentials in the first 13 inches and high in the remainder.

However, Landset Engineers conducted Atterberg limits tests on near-surface soil samples within the development envelope of the proposed project, which resulted in plasticity indexes of 9 to 23. These values indicate that the near surface soil (upper five feet) typically have a low expansion potential. Because the soils encountered at the project site have a low expansion potential, it is unlikely that the proposed improvements

would experience impacts associated with expansive soils, creating substantial risks to life or property. In addition, mitigation measure MM 3.5-1a would require that the project applicant provide a seismic design report for the proposed project consistent with the California Building Code, which would ensure that expansive soils do not result in risks to life or property at the project site. Therefore, this impact would be less than significant.

Alternative Waste Disposal System

Impact 3.6-7:	The project site contains several existing septic tank leach fields that served prior development of the project site, as well as existing limited use of the site. However, the proposed project includes construction of an enhanced on-site wastewater treatment system to serve the proposed project that would serve the increase in wastewater associated with the proposed project. This would be considered a less than significant impact.

The project site contains several existing septic tank leach fields that served the existing development within the project site. Mitigation measure 3.6-4 in Section 3.6: Hazards and Hazardous Materials would ensure that the proposed project properly remove and dispose of all septic tanks located at the project site at an approved landfill facility.

The proposed project includes construction of an on-site wastewater treatment system to serve the project site. The wastewater treatment and distribution system would be designed to produce recycled water that meets the unrestricted use requirements established in Section 60301.230 of Title 22 of the CCR. The specific effluent quality standards of the proposed project would be established by the Central Coast RWQCB during the permitting process. In addition, the proposed wastewater treatment system would be required to comply with Section 15.23 (Sewage Treatment and Reclamation Facilities – Prohibiting the Discharge of Sewage in a Manner Which May Cause Contamination of Groundwater Supplies in Monterey County) of the Monterey County Code. This code section requires that in obtaining a permit the applicant demonstrate that the sewage treatment or reclamation is not allowing sewage effluent containing greater than six mg/1 nitrate-nitrogen to percolate into the groundwater and a nitrate monitoring program must be approved by the Director of Environmental Health. The reader is referred to Section 3.10 of this EIR for a full discussion of the proposed wastewater treatment system.

The proposed project would be served by a wastewater treatment system and therefore would not result in the disposal of wastewater in an area incapable of supporting the increased wastewater at the project site. The impact is considered to be less than significant.

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3.7 HAZARDS AND HAZARDOUS MATERIALS

3.7.1 Introduction

This section of the DEIR discusses the potential presence of hazards and hazardous materials at or within the vicinity of the project site and analyzes the potential risk of these conditions within the context of existing and proposed development and future human activities. This section is based on a *Phase I Environmental Assessment* prepared by Lee & Pierce, Inc. prepared for the project applicant in October 2007. This report is included as Appendix E of this DEIR. The Phase I ESA was peer reviewed by RBF Consulting in January 2008.

3.7.2 Environmental Setting

This section describes the presence of hazardous sites and hazardous material use within the project site and in the project vicinity. Because hazardous materials can cause substantial hazards to human health or the environment when improperly handled, disposed, or otherwise managed, this section includes consideration of sensitive receptors in the vicinity of any hazardous sites, including schools and residences.

Hazardous Materials

Hazardous materials, as defined by the California Code of Regulations, are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed of, or otherwise managed. Hazardous materials are grouped into the following four categories, based on their properties:

- Toxic - causes human health effects;
- Ignitable - has the ability to burn;
- Corrosive - causes severed burns or damage to materials; and
- Reactive - causes explosions or generates toxic gases.

A hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. The criteria that render a material hazardous also make a waste hazardous. If improperly handled, hazardous materials and hazardous waste can result in public health hazards if released into the soil or groundwater; or through airborne releases in vapors, fumes, or dust. Soil and groundwater, having concentrations of hazardous constituents higher than specific regulatory levels, must be handled and disposed of as hazardous waste when excavated or pumped from an aquifer.

Region

The Environmental Protection Agency's (EPA) Resource Conservation and Recovery Act (RCRA) Information database indicates that, as of May 4, 2006, there were 453 transporters, treaters, storers, and disposers of hazardous waste in Monterey County. The most common users are commercial and industrial users such as agricultural producers, automotive repair, dry cleaners, gas stations, pest control, energy providers, and retailers. Institutional users of hazardous materials include schools, colleges, correctional facilities, utilities, hospitals, military installations, landfills, and other public agencies.

The California Department of Toxic Substances Control EnviroStor Database indicates that, as of May 4, 2006, there were 11 contaminated sites in Monterey County that are listed on Federal or State databases. None of these sites are located near the project site.

Project Site

Lee & Pierce Inc. conducted a site visit on September 19, 2007 as part of the Phase I ESA which consisted of a visual examination of the project site for visual evidence of potential environmental concerns.

The project site has been occupied since the early 1900s and the adjacent area was used by the Soledad Mission for vineyards. The project site contains multiple structures that were constructed in or prior to 1978, including approximately 15 single-room wooden vacation units that were constructed around 1972; pool complexes, which are fed by spring water; residential trailers; a maintenance shed; several well/pump houses and water storage tanks, and a main office reception and dining structure. The project site also includes on-site wells, springs, and sewage disposal is provided by on-site septic tanks and leach fields. A caretaker is present on the project site for security purposes, however the project site has not been operated for approximately ten years since the 2003 Phase I was conducted.

Due to the age of the structures on the project site there may be asbestos containing materials (ACM) present in roofing materials, floor coverings and insulation materials including the old boiler. Also present may be lead based paint in deteriorating condition. This is especially visible at the shop/maintenance building. There also may be fluorescent lights on the project site that contain Polychlorinated biphenyls (PCB).

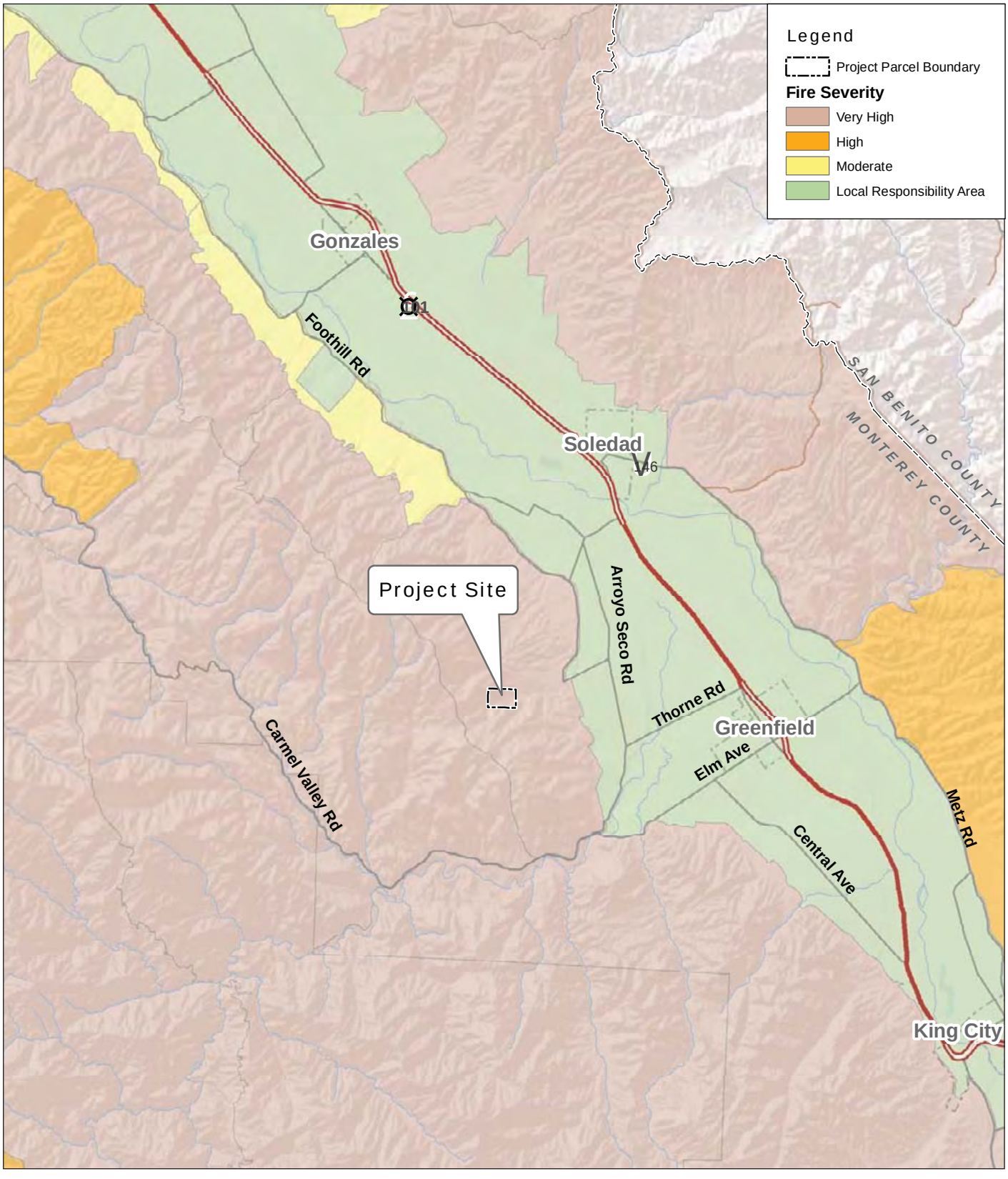
Historical and Regulatory Search

Based on Environmental Data Resources, Inc. (EDR), the database search, performed on September 20, 2007, no regulatory properties are located within the boundaries of the project site. Additionally, no regulatory properties were reported within a one-mile radius of the project site. Based on files obtained by Monterey County Health Department, Division of Environmental Health (MCDEH), an underground fuel tank (UFT) was removed from the project site in 1997 and a site closure letter was provided by MCDEH. Additionally, EDR LienSearch Report, dated September 26, 2007, reported that no environmental liens were identified.

There is evidence of a soil pile for use on road maintenance grading in the resort area. Due to the age of the project site, there may be areas where historic trash/garbage disposal occurred with other places excavated for outhouse disposal.

Fire Hazards

The project site is located in the Central Salinas Valley, where in many areas wildland fires are a major hazard (Monterey County 1987). According to the *Monterey County General Plan*, the project site is located in a very high fire severity zone as noted on Figure 3.7-1, Fire Severity Zones.



0 4 miles

Source: RBF Consulting 2010, Monterey County 2006

Figure 3.7-1

Fire Severity Zones

Paraiso Springs Resort EIR

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The principal elements of wildland fires are topography, climate and fuel loading. The elements are combined in the foothill and canyon areas and constitute a very high fire hazard. The project site is located in one of the foothill/canyon areas of the Central Salinas Valley that has been identified as a very high fire hazard area (Monterey County 1987). The project site was subject to a fire in 1954 that destroyed a number of structures including the main lodge.

3.7.3 Regulatory Background

Federal

Comprehensive Environmental Response, Compensation, and Liability Act

Discovery of environmental health damage from disposal sites prompted the U.S. Congress to pass the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund). The purpose of CERCLA is to identify and clean up chemically contaminated sites that pose a significant environmental health threat. The Hazard Ranking System is used to determine whether a site should be placed on the National Priorities List for cleanup activities.

Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act (SARA) pertain primarily to emergency management of accidental releases. It requires formation of state and local emergency planning committees, which are responsible for collecting material handling and transportation data for use as a basis for planning. Chemical inventory data is made available to the community at large under the "right-to-know" provision of the law. In addition, SARA also requires annual reporting of continuous emissions and accidental releases of specified compounds. These annual submissions are compiled into a nationwide Toxics Release Inventory.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act is the statutory basis for the extensive body of regulations aimed at ensuring the safe transport of hazardous materials on water, rail, highways, through air, or in pipelines. It includes provisions for material classification, packaging, marking, labeling, placecarding, and shipping documentation.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) Subtitle C addresses hazardous waste generation, handling, transportation, storage, treatment, and disposal. It includes requirements for a system that uses hazardous waste manifests to track the movement of waste from its site of generation to its ultimate disposition. The 1984 amendments to RCRA created a national priority for waste minimization. Subtitle D establishes national minimum requirements for solid waste disposal sites and practices. It requires states to develop plans for the management of wastes within their jurisdictions. Subtitle I requires monitoring and containment systems for underground storage tanks that hold hazardous materials. Owners of tanks must demonstrate financial assurance for the cleanup of a potential leaking tank.

State

California Hazardous Waste Control Law

The Hazardous Waste Control Law (HWCL) is the primary hazardous waste statute in the State of California. The HWCL implements RCRA as a "cradle-to-grave" waste management system in the state. HWCL specifies that generators have the primary duty to determine whether their wastes are hazardous and to ensure their proper management. The HWCL also establishes criteria for the reuse and recycling of hazardous wastes used or reused as raw materials. The HWCL exceeds federal requirements by mandating source reduction planning, and a much broader requirement for permitting facilities that treat hazardous waste. It also regulates a number of types of wastes and waste management activities that are not covered by federal law with RCRA.

Local

Monterey County Hazardous Materials Program

The Monterey County Health Department Environmental Health Division manages and regulates the storage, use, and disposal of hazardous wastes through the Hazardous Materials Program. The program provides measures for hazardous waste on-site treatment, spill prevention control and countermeasures for aboveground and underground storage tanks, site mitigation and risk management and prevention.

Monterey County General Plan

The *Monterey County General Plan* was adopted by the Board of Supervisers in 1982. Goal 18 in the *Monterey County General Plan* aims to "minimize the risks from chemical usage." Policy 18.1.1 supports this goal by requiring that the County of Monterey establish land use controls to reduce undesirable effects of hazardous chemicals.

Goal 17 in the *Monterey County General Plan* and its corresponding policies support minimizing the risks of fire hazards. Policies support the continued maintenance and access of fire roads, the use of fire safety programs to educate the residents of the County of Monterey on preventive measures, and the continued updating of fire hazards information. In addition, minimum requirements for new developments are supported along with the use of fire resistant plantings where appropriate. New developments are required to comply with minimum standards in relation to the building of structures that will also minimize fire hazards.

The following policies support this goal:

Policy 17.3.3 The County shall encourage all new development to be located within the response time of 15 minutes from the fire station responsible for serving the parcel. If this is not possible, on-site fire protection systems (such as fire breaks, fire-retardant building materials, and/or water storage tanks) approved by the fire jurisdiction must be installed or development may only take place at the lowest density allowed for the parcel by the General Plan.

Policy 17.3.4 The County shall require all new development to have adequate water available for fire suppression. Water availability can be provided from a conventional water system; from an approved alternative water system if within 300 feet of a habitable structure; by the fire fighting equipment of the fire district within which the property is located; or by an individual water storage facility (e.g. water tank, swimming pool, etc.) on the property itself. The fire and planning departments shall determine the adequacy and location of individual water storage to be provided.

Policy 17.4.1 All residential, commercial, and industrial structural development (not including accessory uses) in high and very high fire hazard areas shall incorporate recommendations by the local fire district before a building permit can be issued.

Policy 17.4.7 The County shall require all subdivisions, multi- unit residential complexes, and commercial and industrial complexes to obtain, prior to permit approval, a statement from the fire department that adequate structural fire protection is available within minimum response time established by this Plan.

Central Salinas Valley Area Plan

The *Central Salinas Valley Area Plan* (Monterey County 1987) contains the following policies applicable to the proposed project:

Policy 17.4.13 (CSV) The Central Valley Fire Hazards Map shall be used to identify areas of high and very high fire hazards for the purpose of applying General Plan policies regarding fire.

3.7.4 Analytical Methodology and Significance Threshold Criteria

Methodology

This section based primarily on a *Phase I Environmental Assessment* prepared by Lee & Pierce, Inc. prepared for the project applicant in October 2007. The Phase I ESA was peer reviewed by RBF Consulting in January 2008 and determined that no additional analysis was necessary.

The Phase I Environmental Assessment was based on review of existing literature, field surveys, and data analysis. As a component of the assessment, Environmental Data Resources, Inc. (EDR) performed a database search on September 20, 2007, to identify federal, state, and local records of hazardous materials activities within a mile of the project site that have the potential to affect conditions on-site. The files of the MCDEH were reviewed for records of hazardous materials or incidents at and within a mile of the project site.

A field survey was conducted on September 19, 2007 to search for signs of use or disposal of hazardous materials. The field survey also included interviews with the property owner (project applicant) and current caretaker of the project site.

Data collected during the literature review and field survey was analyzed to determine the potential for hazards within the project site and project vicinity and to identify potential hazardous constraints at the project site.

The *County of Monterey General Plan* was reviewed to address the potential for wildfire hazards at the project site.

Significance Threshold Criteria

According to Appendix G of the *CEQA Guidelines*, a project may create a significant environmental impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working on the project site;
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working on the project site;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; and
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Impact Analysis

Transport, Use, Disposal, and Release of Hazardous Materials During Operation

Impact 3.7-1:	Development of the proposed project would involve the use of hazardous materials including cleaning solvents, fertilizers, pesticides, and other hazardous materials typical of a hotel/resort spa, and timeshare facility. This would be considered a less than significant impact.

The proposed project is not anticipated to result in significant hazards to the public or the environment. The Monterey County Department of Environmental Health (MCDEH) regulates the storage, handling, and use of hazardous materials. Hazardous materials associated with proposed uses would include cleaning and degreasing solvents, fertilizers, pesticides, and other materials used in the regular maintenance of the uses. Operation of the enhanced wastewater treatment facility would also likely involve the routine use, storage, and transport of cleaning chemicals, mechanical maintenance chemicals, and

other industrial materials. The proposed wastewater treatment and distribution system would be designed to produce disinfected tertiary recycled water that meets the criteria established in CA Code of Regulations, Title 22, Division 4, Chapter 3, Article 1, Section 60301.230 for uses of recycled water for irrigation established in CA Code of Regulations, Title 22, Division 4, Chapter 3, Article 3, Section 60304." The specific effluent quality standards of the proposed project would be established by the Central Coast RWQCB and the California Department of Public Health during the permitting process. In addition, the proposed wastewater treatment system would be required to comply with Section 15.23 (Sewage Treatment and Reclamation Facilities – Prohibiting the Discharge of Sewage in a Manner Which May Cause Contamination of Groundwater Supplies in Monterey County) of the Monterey County Code, provides that a permit be granted for discharge of treated sewage if the sewage treatment or reclamation does not allow sewage effluent that contains greater than six mg/1 nitrate-nitrogen to percolate into the groundwater and that a nitrate monitoring program has been approved by the Director of Environmental Health.

As discussed in the Public Services section of this EIR, the project proposes to treat the well water to remove fluoride. This will be accomplished through the use of activated alumina. The treatment process involves water passed through a tank containing activated aluminum supported by a bed of gravel. The activated aluminum would require regeneration approximately weekly using an acid solution. The waste regeneration solution would then be neutralized using caustic soda. Acid and caustic soda would be delivered to the site in 275-gallon totes: the totes would be stored on site and provided with secondary containment. This will involve the use of the following substances:

NaOH Sodium Hydroxide 7,765 gallons per year

H2SO4 Sulfuric Acid 2,160 gallons per year

HCl Hydrochloric Acid 2,148 gallons per year

Caustic for pH adjustment 792 gallons per year

The amount of materials stored on site will require the project to be permitted as a hazardous material handler and submit an inventory and business response plan. The requirements for reporting and the applicant's proposal that the storage area have secondary containment will result in the impact associated with the storage and use of hazardous materials being a less than significant impact.

The activated alumina process would result in generation of a waste stream equal to about 5% of the water usage that is high in fluoride and aluminum. The preferred approach to disposal of this effluent would be to mix it with the reclaimed water that will be produced by the Wastewater Treatment Plant and used for landscaping irrigation. The goal is to dilute the waste stream to a point that the concentrations are safe for landscaping purposes. This will require permitting from the Regional Water Quality Control Board. If the RWQCB will not allow dilution and use onsite for irrigation, then the waste stream will be stored and taken to the Monterey Regional Water Pollution Control Agency treatment plant. This will result in one tanker trip per day taking effluent to the regional

plant. The permit issued by the RWQCB will ensure that the disposal of the effluent from the water treatment process will be disposed of in a safe manner. The potential for an adverse environmental impact associated with the disposal of the water treatment was stream is considered to be less than significant.

With proper use and disposal according to MCDEH standards, these chemicals are not expected to result in hazardous or unhealthful conditions for employees and patrons of the proposed project. Additionally, all proposed uses located within the project site would be required by the MCDEH to be in compliance with applicable standards and regulations regarding the storage, handling, and use of hazardous materials. Therefore, long-term operational impacts would be considered less than significant.

Transport, Use, Disposal, and Release of Hazardous Materials During Construction

Impact 3.7-2:	During construction of the proposed project, there is the potential for the transport, use, or disposal of hazardous materials, which could create a significant hazard to the public or the environment. This [potentially significant impact is considered to be less than significant with compliance with required Monterey County handling procedures and permits. (Less than Significant)

Implementation of the proposed project may result in the routine transport of hazardous materials during construction. Handling procedures of the County of Monterey (Water Resources and Environmental Health Department) are required during all phases of the proposed project. These measures include standards and regulations regarding the storage, handling, and use of these materials. In addition, in order to comply with the National Pollutant Discharge Elimination System (NPDES) requirements for construction of site storm water discharges, projects involving construction on sites more than one acre are required to prepare and implement a Stormwater Pollution Prevention Plan (SWPP) that specifies how the discharger will protect water quality during construction activities. Compliance with the appropriate hazardous materials handling measures and acquisition of the NPDES General Permit for construction activities would ensure that potential hazardous materials impacts during short-term construction activates associated with the proposed project would be less than significant.

Result in the Release of Hazardous Materials from the Demolition of Structures

Impact 3.7-3:	The proposed project would result in the demolition and removal of all structures within the project site, which may contain asbestos, lead, and/or PCBs from the fluorescent lighting ballasts within the existing structures. The release of these substances into the environment is considered a significant impact. (Less than Significant with Mitigation).

All of the existing structures on the project site will be removed as shown in Figure 2-8, Demolition Plan. These structures include the main lodge, the 15 vernacular cabins, a changing room, a recreation room, a workshop and several small buildings. The six mobile homes located within the project site will be sold and removed.

It is not known whether or not any of the buildings contain ACM or lead paint as surveys have not been conducted, but it is likely that the buildings, which were constructed prior to approximately 1980 contain ACM and lead based paint, which have been identified as hazardous contaminants. The potential release of ACMs and/or LBPs during demolition activities is considered a potentially significant impact. In addition, the presence of PCBs

within the fluorescent lighting ballasts located within the interior of some of the structures is likely. Implementation of the following mitigation measures would ensure that this impact is reduced to a less than significant level.

Mitigation Measure

MM 3.7-3a Pursuant to Cal OSHA regulations, the project applicant shall have each structure proposed for demolition within the project site inspected by a qualified environmental specialist for the presence of asbestos containing material and lead based paints prior to obtaining a demolition permit from the County. If asbestos containing material and/or lead based paints are found during the investigations, the project applicant shall develop a remediation program to ensure that these materials are removed and disposed of by a licensed contractor in accordance with all federal, state and local laws and regulations, subject to approval by the Monterey Bay Unified Air Pollution Control District and the County of Monterey Environmental Health Department, as applicable. Any hazardous materials that are removed from the structures shall be disposed of at an approved landfill facility in accordance with federal, state and local laws and regulations.

MM 3.7-3b The project applicant shall ensure that the removal of all fluorescent lighting ballasts within each structure are removed under the purview of the Monterey County Environmental Health Department in order to identify proper handling procedures prior to demolition of the structures within the project site. All removed fluorescent lighting ballasts shall be removed prior to demolition and disposed of at an approved landfill facility in accordance with federal, state and local laws and regulations.

Implementation of these mitigation measures would ensure that each structure is inspected by a qualified environmental specialist to determine the presence of ACMs, LBPs, and fluorescent lighting ballasts prior to demolition. Should any hazardous materials be encountered with any on-site structures, the materials shall be tested and properly disposed of in accordance with State and Federal regulatory requirements. Implementation of these measures would reduce this impact to a less than significant level.

Removal of Abandoned Septic Systems

Impact 3.7-4:	Implementation of the proposed project may expose people or the property to hazardous materials associated with the abandonment of septic systems at the project site. This would be considered a potentially significant impact. (Less than Significant with Mitigation).

Septic tank systems are located at the project site and would be removed or properly abandoned under permit with Monterey County Environmental Health with implementation of the proposed project. If septic tanks are not removed prior to development of the project site, they could leach contaminants into the soil, which may result in a potentially significant impact to safety and public health. Implementation of the following mitigation measure would reduce this impact to a less than significant level.

Mitigation Measure

MM 3.7-4 Subject to review by the County of Monterey Environmental Health Department, the project applicant shall map the specific location of all septic tanks located within the project site. Once located, the septic tanks shall be removed and properly disposed of at an approved landfill facility or properly abandoned onsite under permit with Monterey County Environmental Health. The applicant shall provide to Monterey County Environmental Health a schedule of all septic tanks on the property and identify those tanks to be physically removed from the property and those tanks to be abandoned onsite under permit with Monterey County Environmental Health.

Implementation of the above mitigation measure would ensure that prior to ground disturbance activities, the specific location of the septic tanks are located, removed, and property disposed of at an approved landfill facility.

Result in the Disturbance of Contaminated Soil

Impact 3.7-5: The project site contains an existing propane tank, above ground fuel storage tank, boiler, and evidence of a debris pile at the project site. The release of hazardous materials during construction activities would be a significant impact. (Less than Significant with Mitigation Incorporated).

The project site is not located on any hazardous materials sites compiled pursuant to Government Code Section 65962.5. No regulatory sites have been reported within the boundaries of the project site and no corrective actions, or restoration has been planned, is currently taking place, or has been completed within the project site. However, the project site contains an existing propane tank, above ground fuel storage tank, boiler, and includes evidence of a debris pile for use on road maintenance grading within the project site. In addition, there may be other areas where historic trash/garbage disposal occurred within the project site. If during removal of the tanks and existing debris piles, hazardous materials have been released into the soil (e.g. staining), this would be considered a potentially significant impact. Implementation of the following mitigation measure would reduce this impact to a less than significant level.

Mitigation Measure

MM 3.7-5 Once the above ground fuel storage tank(s) are removed, a visual inspection of the areas beneath and around the removed tanks shall be performed. Any stained soils observed underneath the storage tanks shall be sampled. Results of the sampling (if necessary) shall indicate the level or remediation efforts that may be required. In the event that subsequent testing indicates the presence of any hazardous materials beyond acceptable thresholds, a work plan shall be prepared subject to review and approval by the County of Monterey Environmental Health Department in order to remediate the soil in accordance with all applicable federal, state, and local regulations prior to issuance of a grading permit.

Emit Hazardous Materials in the Vicinity of a School

No schools are located within a quarter mile of the project site. Therefore, the proposed project would not emit or handle hazardous materials within a quarter mile of an existing or proposed school.

Interference With An Emergency Response Plan/Emergency Evacuation Plan

According to the *Monterey County General Plan*, the project site is not located along an emergency evacuation route and is not anticipated to physically interfere with an adopted emergency response plan or emergency evacuation route.

Potential for Wildfire Hazards at the Project Site

Impact 3.7-6:	The project site is located in a very high fire severity zone. However, the proposed project includes a fire protection plan that would ensure that the proposed project would be protected in the case of fire. With implementation of the fire protection plan, the potential impacts associated with wildfire hazards would be less than significant.

According to the *Monterey County General Plan*, the project site is located in a very high fire severity zone. The proposed project includes a fire protection plan (CHM2Hill 2005b) for the project site (Figure 2-13, Fire Protection Plan, presented earlier). The fire protection plan would consist of hydrant network, pipeline and sprinkler system, and a water reservoir. The hydrant network would be supplied by dedicated firewater pipeline, separate from the proposed project's potable water system. A total of 16 hydrants would be provided within the project site. The flow capacity for each hydrant would be 1,000 gallons per minute.

In addition, all buildings within the project site would include a sprinkling system designed by a licensed Fire Protection Engineer. A commercial sprinkler system supplied by the fire water pipeline system would be provided for the Hotel/Spa Resort complex, the Hamlet, and the condominiums. The commercial sprinkler system would be supported by a 500,000 gallon water reservoir located on the project site[11]. The sprinklers for the single family homes and condominiums would be connected to the potable water system. Other fire protection measures implemented within the project site would include 12-foot wide access roads by the Spa, Fitness Center, and condominiums, adequate turn-arounds, and access road bridge designed for highway loading standards.

Implementation of the Fire Protection Plan would ensure that the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, which would be considered a less than significant impact.

[11] The precise storage volume and type of storage will be established through a detailed engineering study performed during the design development phase of the proposed project.

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3.8 HYDROLOGY AND WATER QUALITY

3.8.1 Introduction

This section addresses water resource issues associated with implementation of the proposed project. Specifically, this section presents information related to potential changes to the water quality of post-development storm water runoff associated with the proposed project. This section also contains an evaluation of the hydrologic impacts associated with the proposed project's use of groundwater.

Previous reports used to prepare this section include the following:

- *Draft Environmental Impact Report/Environmental Impact Statement for the Salinas Valley Water Project* (United States Army Corps of Engineers and Monterey County Water Resources Agency 2001)
- *State California's Groundwater Bulletin 118* (California Department of Water Resources 2004)
- *Geologic and Soil Engineering Feasibility Report* (Landset Engineers 2004)
- *Existing Hydrologic and Hydraulic Site Conditions* (CH2MHill 2005)
- *Monterey County Groundwater Management Plan* (Monterey County Water Resources Agency 2006)
- *Paraiso Springs Resort: Response to Hydrology and Hydraulic Analysis and Erosion Control Measures Review Comments* (CH2M Hill 2008)
- *Response to Preliminary Engineering Reports for Paraiso Springs Hot Springs Prepared by CH2MHill dated August 2010* (Monterey County Water Resources Agency 2010)
- *Paraiso Springs Resort – Drainage Analysis and Drainage Plan Comments, May 2, 2012* (CH2MHill 2012)
- *Stream Setback Plan* (CH2MHill 2012)
- *Letter re. Paraiso Springs Resort PLN040183 Stream Channel Modification Response to Comments from Monterey County* (CH2M Hill 2013)
- *Stream Setback Plan* (CH2MHill 2013)

3.8.2 Environmental Setting

Climate

Warm dry summers and cool moist winters characterize the climate of Monterey County. The average temperature is approximately 56°F. Mean annual precipitation across the county is approximately 15 inches per year, though rainfall in excess of 30 inches has been recorded in some years. Given the fact that the elevation across the entire watershed ranges from 1,000 to 2,400 feet, the mean annual precipitation was conservatively estimated to be 23.5 inches (CH2MHill 2008). Approximately 90 percent of this rainfall occurs between November and April. Measurable precipitation averages 51 days per year (Monterey County Water Resources Agency 2008).

Topography and Drainage

The proposed project site is located west of the City of Greenfield. The Paraiso Springs drainage, which flows through the project site, begins on the eastern slopes of the Sierra de Salinas Foothills and in the westerly portion of the Arroyo Seco Watershed, travels northeasterly to the Arroyo Seco Valley floor, where flows are collected and enter the Arroyo Seco River. The Arroyo Seco River is a major tributary to the Salinas River.

The primary drainage basin, tributary to the Paraiso Springs channel, extends from the southwest, at elevation 2,400 feet (NGVD), to the northeast project boundary, at elevation 1,000 feet. The basin is approximately 1,160 acres in size, and is surrounded by mostly undeveloped and rural agricultural land uses. The mountains and hillsides that are the primary sources of flows to the creek are covered by a mixture of native oak savannas, sycamore river valleys, grasslands, and scrub chaparral. The average slope of the hills southwest of the project site is 40 percent. The average slope of the hills to the west of the project site is 36 percent. Topographic contour patterns show that there are four points within the basin that collect and transfer flows from the higher areas of the basin to the existing stream. The main drainage channel through the project site has an approximate width of 50 feet.

The adjacent lands southerly of this channel are relatively flat and extend several hundred feet beyond the top of bank. As described in Section 3.6: Geology and Soils, there is the potential for landslides and debris production within the project area. This is the result of sediment and debris produced in the steeper portions of the drainage basin that migrate into the channel and require on-going maintenance. The location of these subbasins surrounding the project site are shown in Figure 3.6-7, Potential Debris Basin Locations, presented earlier in Section 3.6 of this EIR.

The channel slope upstream of the project site (approximately 50 percent of its total length) is 25 percent. The channel slope in the valley section of the channel (the length of the project site) is approximately 11.2 percent. The expected average channel velocity, within the project site, is in the order of 27 feet per second, at a full bank flow condition. This velocity, in combination with existing soil conditions, illustrates a potential for channel erosion during infrequent storm events (CH2MHill 2005a).

Upon leaving the project site, storm water travels through a natural ravine and then through a series of open agricultural drainage ditches and culverts under road crossings. These ditches are highly channelized, and are either located along natural drainage paths or adjacent to a roadway. The banks have been stabilized in some locations by the installation of sandbags. These drainage ditches are largely man-made, most likely by local property owners, and are characterized by steep, unvegetated side slopes. Storm water continues to travel northeasterly to the Arroyo Seco Valley floor where flows are collected and enter the Arroyo Seco River, which eventually flows into the Salinas River.

Flood Zone

The project site is located within Zone X as shown on the effective FEMA Flood Insurance Rate Map (FIRM) for the area. As defined on the FIRM, Zone X areas are outside of the 0.2 percent annual chance floodplain.

Surface Water Quality

Within the Central Salinas Valley Area Plan planning area, surface water quality is an issue only for the Salinas River. During dry months of summer and fall, the flow of the Salinas River is minimal. With a reduced flow, pollutants remain concentrated and water quality deteriorates. Pollutants from agricultural lands and from sewage treatment facilities have severely degraded the Salinas River, particularly in the segment from State Route 68 northward.

Regional Hydrogeology

The project is located within the Central Coast Hydrologic Region defined in California's Groundwater Bulletin 118. The region covers approximately 7.22 million acres (11,300 square miles) in central California. The Central Coast Hydrologic Region has 50 delineated groundwater basins, and it includes all of Monterey County (California Department of Water Resources 2004).

Salinas Valley Groundwater Basin, Forebay Aquifer Subbasin

The project is located partially within the Salinas Valley Groundwater Basin (SVGB) Forebay Aquifer Subbasin defined in California's Groundwater Bulletin 118. The SVGB is divided into eight subbasins including the Forebay Aquifer Subbasin. The Forebay Aquifer Subbasin occupies the central portion of the Salinas Valley, extends from the City of Gonzales in the north to approximately three miles south of Greenfield, and it is bounded to the west by the contact of Quaternary terrace deposits of the subbasin with Mesozoic metamorphic rocks (Sur Series) or middle Miocene marine sedimentary rocks (Monterey Shale) of the Sierra de Salinas. To the east, the boundary is the contact of Quaternary terrace deposits or alluvium with granitic rocks of the Gabilan Range. The northern subbasin boundary is shared with the Salinas Valley –180/400-Foot Aquifer and –Eastside Aquifer and represents the southern limit of confining conditions in the 180/400-Foot Aquifer Subbasin. The southern boundary is shared with the Salinas Valley – Upper Valley Aquifer Subbasin and generally represents the southern limit of confining conditions above the 400-Foot Aquifer (MW 1994). This boundary also represents a constriction of the Valley floor caused by encroachment from the west by the composite alluvial fan of Arroyo Seco and Monroe Creek (California Department of Water Resources 2004). See Figure 3.8-1, Regional Hydrology.

Average annual precipitation is approximately 11 inches at the Valley floor to 17 inches at the western margin of the subbasin

MCWRA Zone 2C and Forebay Hydrologic Subarea

The project is located completely within Monterey County Water Resources Agency (MCWRA) Zone 2C and the Forebay Hydrologic Subarea defined in the Salinas Valley Water Project (SVWP) Engineer's Report, prepared by RMC, dated January 2003. The SVWP is Monterey County's plan to stop seawater intrusion, and recharge the Salinas River Basin. The Zone 2C boundary was defined based on geological conditions and hydrologic factors, which define and limit the benefits, derived from the changes to operations, storage, and release of water from Nacimiento and San Antonio reservoirs.

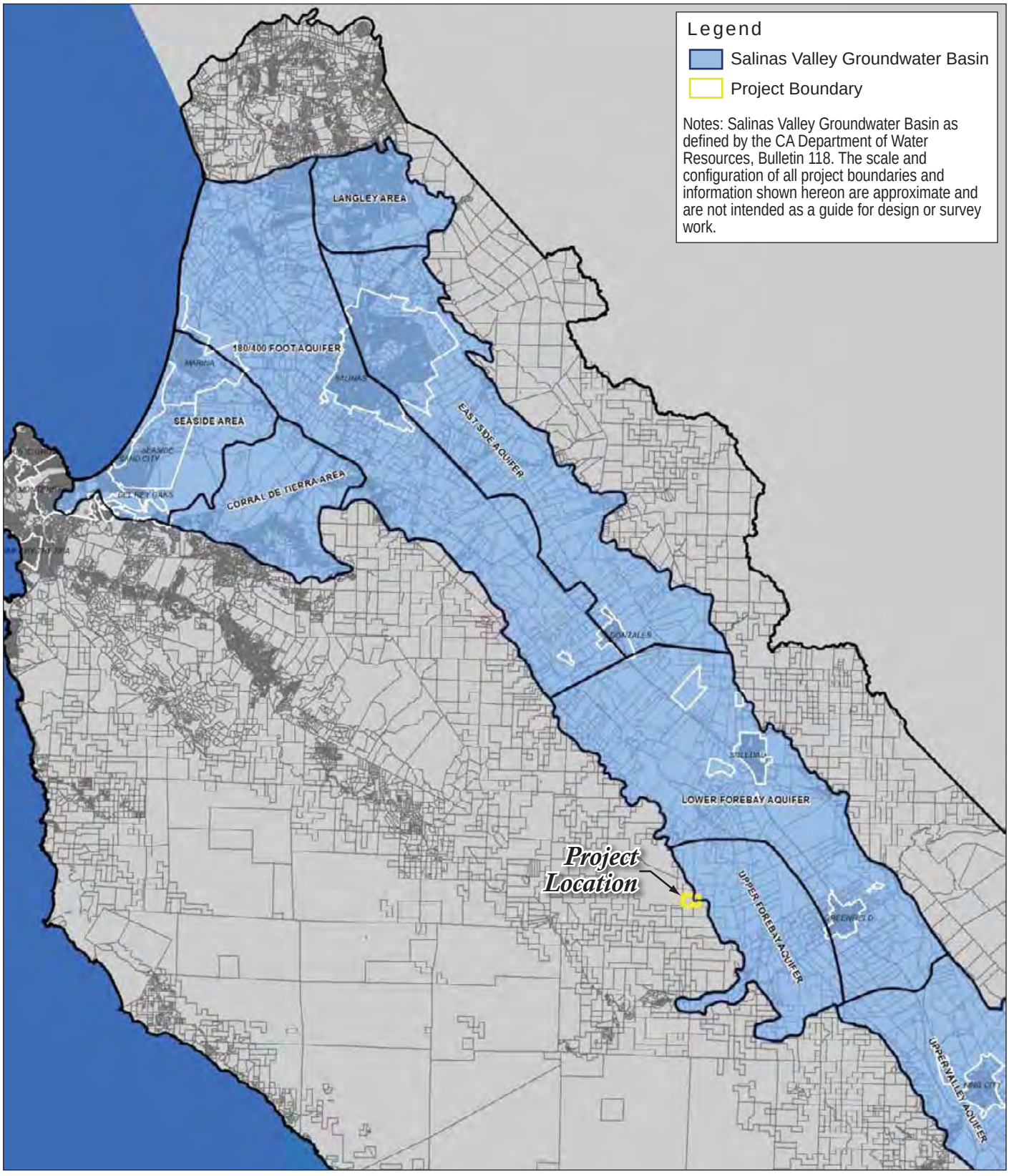
The zone is separated into seven major hydrologic subareas that receive various levels of benefits. The basis for inclusion of lands within Zone 2C was:

1. There must be a hydrogeologic or flood protection basis for establishing benefit;
2. The zone of hydrologic benefits is defined as land overlaying water bearing alluvium that has hydraulic continuity with the Salinas River;
3. The zone of benefits excludes narrow, likely shallow, channels off the main basin where pumping can not induce an up-gradient recharge;
4. Existing annexations, such as the Chalone Valley that are non-hydraulically connected have been included since they are receiving benefits through physically installed pumping and piping equipment.
5. The southern boundary of the zone of benefit is defined by the Monterey/San Obispo County line;
6. Lands immediately adjacent to San Antonio reservoir receive hydrologic benefits due to recharge of the underlying aquifer and receive recreational benefits afforded by their proximity to San Antonio reservoir;
7. The boundary in the Fort Ord area is defined by the existing Zone 2A boundary. Work completed for the Army by Harding Lawson Associates clearly demonstrates the boundary of the hydraulically connected alluvium is approximated by the existing Zone 2A delineation;
8. Any contiguous parcel that overlies a portion of the alluvial material that is in hydrologic continuity with the Salinas River has been included in Zone 2C since the overlying portion of the parcel provides access to all hydrologic benefits (RMC 2003).

Groundwater

The primary water bearing units of the Forebay Aquifer Subbasin are the same units that produce water in the adjacent 180/400-Foot Aquifer Subbasin – namely, the 180-foot Aquifer and the 400-foot Aquifer. However, the near-surface confining unit (Salinas Aquitard) of the 180/400-Foot Aquifer Subbasin does not extend into the Forebay or other subbasins. Groundwater in the Forebay Aquifer is unconfined and occurs in lenses of sand and gravel that are interbedded with massive units of finer grained material (California Department of Water Resources 2004).

The thickness of the 180-foot aquifer varies from 50 to 150 feet in the Salinas Valley, with an average of 100 feet. The 180-Foot Aquifer may be in part correlative to older portions of Quaternary terrace deposits or the upper Aromas Red Sands. More recent studies suggest the 400-Foot Aquifer exists not only in the 180/400-Foot Aquifer Subbasin, but also in the lower Forebay Aquifer Subbasin. The 400-Foot Aquifer has an average thickness of 200 feet and consists of sands, gravels, and clay lenses. The upper portion of this aquifer may be correlative with the Aromas Red Sands and the lower portion with the upper part of the Paso Robles Formation. The 180-Foot Aquifer is separated from the 400-Foot Aquifer by a zone of discontinuous sands and blue clays called the 180/400-Foot Aquiclude which ranges in thickness from 10 to 70 feet (California Department of Water Resources 2004).



Source: Monterey County Water Resources Agency 2013

Figure 3.8-1

Regional Hydrology

Paraiso Springs Resort EIR

E M C

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An additional deeper aquifer (also referred to as the 900-Foot Aquifer or the Deep Aquifer) is present in the lower and central Salinas Valley, including beneath the Forebay Aquifer Subbasin. This deeper aquifer consists of alternating layers of sand-gravel mixtures and clays (up to 900 feet thick), rather than a distinct aquifer and aquitard (California Department of Water Resources 2004).

As of 1994, there was an estimate of 4,530,000 acre-feet of stored groundwater in the Forebay Aquifer Subbasin. From 1964 to 1974, the amount of groundwater in storage increased 23,300 acre-feet. This increasing trend continued from 1974 to 1984, with an increase of 60,100 acre-feet. Between 1984 and 1994, the amount of groundwater in storage declined 99,700 acre-feet (California Department of Water Resources 2004).

Seawater Intrusion

An imbalance between the rate of groundwater withdrawal and recharge has resulted in overdraft conditions in the Salinas Valley Groundwater Basin, which has allowed seawater from Monterey Bay to intrude inland approximately six miles in the Pressure 180-Foot Aquifer and approximately two miles in the Pressure 400-Foot Aquifer. Since 1949, an average of 10,000 acre-feet of seawater per year has intruded into basin aquifer. The Castroville Seawater Intrusion Project (CSIP) and the Salinas Valley Water Project (SVWP) were designed and constructed to attain a hydrologically balanced groundwater basin and halt the long-term trends of seawater intrusion (Cardno ENTRIX 2013).

The Salinas Valley Water Project was approved in 2003 and construction was completed in January 2010 (Monterey County Water Resources Agency 2010). The two major components of the Salinas Valley Water Project are the modification of the Nacimiento Dam spillway and construction of an inflatable diversion dam on the lower Salinas River. Coupled with the Castroville Recycled Water project that was implemented in 1998, the Salinas Valley Water Project is intended to increase recharge and reduce coast-side pumping to bring the Salinas Valley groundwater basin into balance, and halt seawater intrusion of the coastal areas.

The Salinas Valley Water Project will increase summer flows and recharge along the Salinas River, and the diverted water will be blended with the recycled water for the Castroville project. The present 8,900 acre-foot seawater intrusion is projected to be reversed to an outflow of 900 acre-feet of fresh water (Monterey County Water Resources Agency 2003, page 3-6). The modeling developed for the Salinas Valley Water Project predicts a rise in lower Salinas Valley Groundwater Basin levels for at least 35 years following Salinas Valley Water Project implementation (United States Army Corps of Engineers and Monterey County Water Resources Agency 2001, Figures 5.3-13 through 5.3-17).

3.8.3 Regulatory Background

As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an

NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. In most cases, the NPDES permit program is administered by authorized states. Since its introduction in 1972, the NPDES permit program is responsible for significant improvements to our nation's water quality.

In 1969, the State Legislature enacted the Porter-Cologne Water Quality Control Act, one of the nation's strongest pieces of anti-pollution legislation. This state law was so influential that portions were used as the basis of the Federal Water Pollution Control Act Amendments of 1972 (commonly known as the Clean Water Act).

The Clean Water Act requires the states or the U.S. Environmental Protection Agency to set standards for surface water quality, mandate sewage treatment and regulate wastewater discharges into the nation's surface waters. Within California the State assumes responsibility for implementing the Clean Water Act. This involves combining state and federal guidelines to develop water quality standards, issue discharge permits and operate the grants program.

Dickey Water Pollution Act

The Dickey Act acknowledged that California's water pollution problems are primarily regional and depend on precipitation, topography, and population, as well as recreational, agricultural, and industrial development, all of which vary greatly from region to region, thus creating a need for a "State Water Pollution Control Board."

The Dickey Act established nine regional water pollution control boards located in each of the major California watersheds. Their primary responsibility is overseeing and enforcing the state's pollution abatement program. Gubernatorial appointees, representing water supply, irrigated agriculture, industry, and municipal and county government in that region, serve on each Regional Water Board.

Nine Regional Water Quality Control Boards (RWQCB) represent the major watersheds of the state. These regional boards serve as the frontline for state and federal water pollution control efforts. The Central Coast Region spans from Santa Clara County south to northern Ventura County. This region has 378 miles of coastline, including Santa Cruz and the Monterey Peninsula, the agricultural valleys of Salinas and Santa Maria, and the Santa Barbara coastal plain.

County of Monterey

Monterey County General Plan

The Monterey County General Plan (1982) contains the following goals and policies applicable to the proposed project:

Goal 5 To conserve and enhance the water supplies in the County and adequately plan for the development and protection of these resources and their related resources for future generations.

Policy 5.1.1 Vegetation and soil shall be managed to protect critical watershed areas.

Policy 5.1.2 Land use and development shall be accomplished in a manner to minimize runoff and maintain groundwater recharge in vital water resource areas.

Policy 5.2.2 The County shall establish special procedures for land use, building locations, grading operations, and vegetation removal adjacent to all waterways and significant water features.

Goal 6 Promote adequate, replenishable water supplies of suitable quality to meet the County's various needs.

Policy 6.1.1 Increased uses of groundwater shall be carefully managed, especially in areas known to have ground water overdrafting.

Policy 6.1.2 Water conservation measures for all types of land uses shall be encouraged.

Goal 21 To ensure that the County's water quality is protected and enhanced to meet all beneficial uses, including domestic, agricultural, industrial, recreational and ecological.

Policy 21.2.1 The County shall require all new and existing development to meet federal, state, and county water quality regulations.

Policy 21.2.3 Residential, commercial, and industrial developments which require 20 or more parking spaces shall include oil, grease, and silt traps, or other suit able means, as approved by the Monterey County Surveyor, to protect water quality; a condition of maintenance and operation shall be placed upon the development.

Policy 21.3.1 The County should support sewage treatment projects that reduce contamination of surface and groundwater to acceptable levels.

Policy 21.3.2 The County shall encourage the investigation, under supervision of County health officials, of the cost-effectiveness, reliability and health acceptability of alternative wastewater disposal methods. The County should approve alternate wastewater disposal methods when they are safe and acceptable to the Environmental Health Department.

Policy 21.3.3 No division of land or use permit for residential, commercial, or industrial uses shall be approved without proof that an adequate waste disposal system can be developed.

Central Salinas Valley Area Plan

The Central Salinas Valley Area Plan (1987) contains the following policies applicable to the proposed project:

Policy 16.2.1.1 (CSV) Site plans for new development shall indicate all floodplains, flood hazards, perennial or intermittent streams, creeks, and other natural drainages. Development shall not be allowed to occur within these

drainage courses nor shall development be allowed to disturb the natural banks and vegetation along these drainage courses, unless such disturbances are approved by the Flood Control and Water Conservation District. Development shall adhere to all regulations and ordinances related to development in flood plains.

Policy 16.2.1.2 (CSV) Increased storm water runoff from urban development shall be controlled to mitigate impacts on agricultural lands located downstream.

Chapter 19.10, Monterey County Code - Drainage Control Ordinance

Drainage, and the preparation of design improvement plans to control runoff and prevent erosion, is regulated under Chapter 19.10, regarding subdivision improvements. Improvement plans for drainage and runoff control are subject to the approval of the MCWRA in accordance with the MCWRA design criteria. Chapter 19.10.050 of the Monterey County Code, requires that storm water runoff from subdivisions be collected and conveyed by an approved storm drainage system. Detention ponds, drainage swales and/or check dams may be required to reduce offsite peak storm flow generated by projects during a 100-year storm event. The maintenance of the on-site drainage facilities, including detention ponds, shall be the responsibility of a homeowners association or other similar entity, where applicable, and provisions for annual inspection and maintenance shall be included in the conditions, covenants and restrictions. Improvements shall be designed to meet Monterey County Water Resources Agency Design Criteria and improvement plans shall be submitted to the Monterey County Water Resources Agency for review and approval. Drainage improvements for runoff from impervious surfaces shall be engineered to minimize erosion through the use of rocked culvert inlets and outfalls, energy reducers and location of culverts. Design features shall include reseeding exposed slopes as well as minimizing the use of artificial slopes. Improvements shall be constructed in accordance with the approved plans.

Chapter 16.12 Monterey County Code - Erosion Control Ordinance

Chapter 16.12.070 of the Monterey County Code requires that development activities control runoff to prevent erosion during a 10-year storm. All runoff must be detained or dispersed so that the runoff rate does not exceed the pre-development level. Any concentrated runoff, which cannot be effectively detained or dispersed without causing erosion, shall be carried in non-erodible channels or conduits to the nearest drainage course designated for such purpose or to onsite percolation devices with appropriate energy dissipaters to prevent erosion at the point of discharge. Runoff from disturbed areas shall be detained or filtered by berms, vegetated filter strips, catch basins, or other means as necessary to prevent the escape of sediment from the disturbed area (Ordinance 2806 1981). In addition, Chapter 16.12.090 of the Monterey County Code prohibits grading activities of more than one acre per year per site between October 15th and April 15th, in water supply watersheds, and high erosion hazard areas, unless authorized by the Director of Building Inspection.

Chapter 19 Monterey County Subdivision Ordinance

Section 19.10.070 - Water Supply provides:

A. Provision shall be made for such domestic water supply as may be necessary to protect public health, safety, or welfare. Such water supply may be:

   1. By connection to a public utility, in which case a letter from the public utility shall be submitted showing its ability to serve the proposed subdivision and evidence indicating that a satisfactory agreement has been entered into for such services.
   2. By the establishment of a two or more connection approved water system or by connection to an existing approved water system with the provision of service to each lot.
   3. From a single connection water source on each parcel.

B. In the event the subdivider proposes establishment of a water system, the subdivider shall submit evidence to the Director of Environmental Health that the source of supply is adequate and potable. In order to demonstrate adequacy, the supply must comply with Title 15.04 of the Monterey County Codes or Title 22 of the California Administrative Code. Unless waived, the subdivider shall submit a design plan of the system for review by the Director of Environmental Health. The design plan shall meet Residential Subdivision Water Supply Standards. Any proposal to share a water source with five or more connections requires compliance with the State Domestic Water Act set forth in Health and Safety Code Section 4010 et seq. A water source with two to four connections must comply with Title 15 of the Monterey County Code.

Chapter 15.04 Monterey County Code – Domestic Water Supply

Section 15.04.140 - Quantity of water supply.

A. Every domestic water system shall provide sufficient water from the water sources and storage facilities to adequately, reliably and safely meet the maximum water demand at all times.
B. Water sources shall demonstrate reliability and capability of a long term sustained yield in accordance with the requirements of Chapter 16 of Title 22 of the California Code of Regulations.

3.8.4 Analytical Methodology and Significance Threshold Criteria

Significance Threshold Criteria

As stated in Appendix G of the CEQA Guidelines, a project may create a significant impact related to hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements;
- 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 which would not support existing land uses or planned uses for which permits have been granted);

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site;
- 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, which would result in flooding on- or off-site;
- Create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map (FIRM) or other flood hazard delineation map;
- Place within 100-year flood hazard area structures, which would impede or redirect flood flows;
- 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; and
- Inundation by seiche, tsunami, or mudflow?

Federal, state, and local drainage laws and regulations govern the evaluation of impacts on surface water drainage. For this evaluation, impacts on surface water drainage would be considered significant if the project would alter the drainage patterns of the site, with resultant in substantial erosion, siltation, or increased runoff that would increase flooding. Increase in the amount of runoff could be considered significant if local roads and downstream storm drain facilities are impacted.

Impact Analysis

Short-term Erosion and Water Quality

Impact 3.8-1:	During grading and construction activities, erosion of exposed soils may occur and pollutants generated by site development activities may result in water quality impacts if erosion control measures are not implemented. This is considered a potentially significant impact. (Less than Significant with Mitigation).

The proposed project would result in the disturbance of approximately 50 acres of the 276 acre project site and would involve the excavation of approximately 162,073 cubic yards of soil. Of this amount 38,584 cubic yards would be topsoil that would be removed from the project site and stockpiled for use in the landscape areas, the vineyard and/or on-site disposal. The remaining 123,489 cubic yards would be used as fill material within the project site. Once vegetation is removed at the project site, the exposed and disturbed soil would be susceptible to high rates of erosion from wind and rain if grading were to occur between October 15 and April 15, resulting in sediment transport from the project site and potentially deep scarring of the landscape.

Delivery, handling and storage of construction materials and wastes, as well as use of construction equipment on-site during the construction phase of the project, will

introduce a risk for storm water contamination, which could impact water quality. Spills or leaks from heavy equipment and machinery can result in oil and grease contamination of storm water. Some hydrocarbon compound pollution associated with oil and grease can be toxic to aquatic organisms at low concentrations. Staging areas, or building sites can be the source of pollution due to paints, solvents, cleaning agents, and metals contained in the surface of equipment and materials. The impacts associated with metal pollution of storm water include toxicity to aquatic organisms, bioaccumulation of metals in aquatic animals, and potential contamination of drinking supplies. Pesticide use (including herbicides, fungicides, and rodenticides) associated with site preparation work is another potential source of storm water contamination. Pesticide impact to water quality includes toxicity to aquatic species and bioaccumulation in larger species through the food chain. Gross pollutants such as trash, debris, and organic matter are additional potential pollutants associated with the construction phase of the project. Potential impacts include health hazards and aquatic ecosystem damage associated with bacteria, viruses and vectors, which can be harbored by pollutants.

Implementation of mitigation measure MM 3.5-5a would require that the project applicant prepare a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the NPDES Construction Activities general permit which would include an erosion control plan in accordance with Chapter 16.12 of Monterey County Code and construction-phase housekeeping measures for control of contaminants. The plan shall be prepared by a registered civil engineer, or approved erosion control specialist and submitted for approval prior to permit issuance for building, grading, or land clearing. The erosion and sediment control plan shall demonstrate how the proposed project would effectively minimize soil erosion and sedimentation from the project site and must also provide for the control of runoff from the site. The SWPPP will also set forth the best management practices monitoring and maintenance schedule and responsible entities during the construction and post-construction phases. Implementation of mitigation measure MM 3.5- 5a would reduce short-term erosion and impacts to surface water quality to a less than significant level.

Long Term Surface Water Runoff

Impact 3.8-2:	Implementation of the proposed project would alter the existing drainage pattern and increase the amount of impervious surfaces on the project site due to construction of the hotel, residences, roadways, driveways, and other amenities. This would be considered a potentially significant impact. (Less than Significant with Mitigation)

Implementation of the proposed project would affect approximately 50 acres of land representing a very small portion (four percent) of the total basin (1,160 acres). Approximately 23 acres of the project site (two percent of the total basin) is expected to contain impermeable surfaces (e.g. buildings and roadways). Because this is such a small percentage of the overall drainage basins, no significant increase in outflow from the basin is anticipated. However, because the project is to be built in the flatter lands that are tributary to the drainage channel, an impact to the current drainage patterns can be expected. Flows that are now delivered to the main channel via existing drainages and overland sheet flow will require collection and routing via culverts, piped storm drainage systems, or open ditches with erosion protection (CH2MHill 2005c).

The main drainage channel through the project site has an approximate width of 50 feet. The adjacent lands southerly of this channel are relatively flat and extend several hundred feet beyond the top of bank. The current bankfull capacity of the primary drainage channel is approximately 4,000 cfs excluding any existing culverts. The channel has been replaced by culverts on in several sections. These culverts will be removed and the channel will be restored to its natural capacity in those areas.

Two new stream crossings are proposed, and a third will be placed in the location of an existing culvert. These stream crossings will need to be designed and engineered to convey the 100 year storm event to preclude flooding on the project site.

As shown in Table 3.8-1, Pre- and Post Project 10-Year and 100-Year Storm Events, storm water volumes for the entire watershed were found to increase from 117.5 acre-feet (123.5 cfs) to 124.0 acre-feet(124.2 cfs) for the 10-year event and from 261.1 acre-feet (310.9 cfs) to 269.6 acre-feet (315.8 cfs) for the 100-year event. This increase in storm water runoff for 6.5 acre-feet (0.7 cfs) for the 10-year storm and 8.5 acre-feet (4.9 cfs) for the 100-year storm translates to 5.5 percent and 3.3 percent, respectively, of the total runoff volume and 0.6 percent and 1.6 percent, respectively, of the peak discharge (CH2MHill 2008).

Table 3.8-1 Pre- and Post Project 10-Year and 100-Year Storm Events

Parameter	10-year Storm Event		100-year Storm Event	
	Pre-Project	Post Project	Pre-Project	Post Project
Volume (acre-feet)	117.5	124.0	261.1	269.6
Peak Discharge (cfs)	123.5	124.2	310.9	315.8
Source: CH2MHill, 2008				

Based upon these numbers the existing channel has capacity to convey upstream flows provided that all roadway crossings of the creek provide a waterway opening that is comparable to the existing channel section.

The Monterey County Water Resources Agency (WRA) has a standard design policy that requires storm water detention facilities be provided to limit the 100-year post-development runoff rate to the 10-year pre-development rate. The applicant as part of their initial project indicated that the proposed project, storm water in excess of pre-project conditions will be retained on site through the use of low impact development (LID) methods, often referred to as storm water best management practices (BMPs). Techniques will include roof runoff controls, site design and landscape planting, pervious paving, vegetated swales and buffer strips, and bioretention. The applicant calculated the 10 year storm and 100 year storm run off for the project site and that is included in Table 3.8-2, Required Onsite Detention.

These numbers are based upon a two hour storm event and show that the project would need to detain at least 2.9 acre feet of what to maintain the flow rate of a 10-year storm during a 100 year storm event. The project applicant, on their tentative map dated May 18, 2012, has designed a detention basin to accomplish this purpose. The detention basin

Table 3.8-2 Required Onsite Detention

	2-Hour Volume (CF)	2 Hour Volume (MG)	2 Hour Volume (ac-ft)
100 Year Post Development	197,740	1.5	4.4
10 Year Pre-Development	64,820	0.5	1.5
Difference	**127,920**	**1.0**	**2.9**

CF=Cubic Feet
MG = million gallons
Ac-ft = acre feet
Source: CH2MHill – Drainage Analysis and Drainage Plan Comments (May 2, 2012)

is shown on the eastern end of the project site, just south of the stream channel. The use of LID methodologies and techniques would disperse the detention on the site and minimize the disturbance cased by a detention basin and is thus the preferred option. This would have favorable results for protection of water quality and minimize infrastructure requirements. The mitigation measure below is written to require detention through either LID methodologies or the use of a centralized detention basin to meet the specified design standards.

Mitigation Measure

MM 3.8-2 Prior to recording the Final Subdivision Map or approval of any construction permit, Monterey County Public Works Department and Monterey County Water Resources Agency shall require that the project applicant contract with a registered Civil Engineer to prepare a final drainage plan. The drainage control plan shall design storm water detention facilities to limit the 100-year post-development runoff rate to the 10-year pre-development rate in accordance with Section 16.16.040.B.5 of the Monterey County Code and Monterey County Water Resource Agency (MCWRA). This shall be accomplished through the use of low impact development (LID) features and best management practices (BMP). In the event that the detention objectives can not be accomplished through LID methodologies, a detention basin may be used. In addition, the drainage plan shall incorporate relevant storm water recommendations as described in the Geologic and Soil Engineering Feasibility Report (Landset Engineers 2004). The final drainage plan shall be submitted for review and approval by the Public Works Department and Monterey County Water Resources Agency prior to the recording the Final Subdivision Map or approval of any construction plans.

Implementation of mitigation measure MM 3.8-2 would require preparation of a final drainage plan to detain the difference between the 100-year post-development runoff rate and the 10-year pre-development runoff rate. Therefore, the impact associated with long-term surface water runoff will be reduced to a less than significant level.

Long-Term Surface Water Quality

Impact 3.8-3: The proposed project would result in an increase in long-term surface runoff that may contain urban contaminates that would have an adverse impact on surface water quality. This is considered a potentially significant impact. (Less than Significant with Mitigation)

Implementation of the proposed project would increase the amount of impervious surface. Surface runoff from impervious surfaces may contain urban contaminates. Typical residential runoff contaminants would include: petroleum products and sediments from vehicles on the project site; hazardous materials dumped in the storm water drainage system; and pesticides and fertilizers used on landscaping. During storm events, these pollutants would be flushed by storm water runoff into the storm water drainage system and ultimately to the Arroyo Seco River and the Salinas River and eventually to Monterey Bay where they would contribute to cumulative non-point contaminant loads and result in incremental deterioration of water quality. Excess nutrients from fertilizers can affect water quality by promoting excessive and/or rapid growth of aquatic vegetation reducing water clarity, and causing oxygen depletion. Pesticides also may enter into storm water after application on landscaping areas of the project. Pesticides affect water quality because they are toxic to aquatic organisms and can bio-accumulate in larger species such as birds and fish. This is considered a potentially significant impact to long-term surface water quality.

As discussed in Section 3.5, Geology and Soils, the project site is highly susceptible to erosion. Most of the sediment that travels from the steeper areas of the watershed to the valley of the watershed during annual rainfall events is naturally deposited on the flatter areas of the watershed within the project site. Sediment that currently feeds the channel downstream during more frequent or annual rainfall events is contributed by the adjacent floodplain below the project site through sheet flow. On-site debris basins, as described in Impact 3.5-4, will be designed to retain large-particle sediment and other debris, but not suspended sediment. Passage of suspended sediment will also be aided by the removal of existing culverts and the restoration of natural drainage channel conditions as part of the project. As such, it is expected that nutrients necessary for the health of the channel, downstream of the project site, will continue to be replenished.

Implementation of mitigation measure MM 3.5-5 and MM 3.8-2 would require that the project applicant contract with a registered engineer to prepare an erosion control plan, and a Storm Water Pollution Prevention Plan (SWPPP), and a final drainage plan. The SWPPP shall document best management practices (filters, traps, bio-filtration swales, etc.) to ensure that urban runoff contaminants and sediment are minimized during site preparation, construction, and post construction periods. The final drainage plan shall include mitigation measures that shall reduce the volume and runoff rate of storm water flow. The following mitigation measure would incorporate water quality control measure in the drainage design reducing this impact to a less than significant level.

Mitigation Measure

MM 3.8-3 To prevent the potential contamination of downstream waters from urban pollutants, Monterey County Planning Department, Public Works Department and Water Resources Agency shall require that the storm drainage system design, required under mitigation measure MM 3.8-2,

includes, but is not limited to the following components: grease/oil separators; sediment separation; vegetative filtering to open drainage conveyances and detention basins; and on-site percolation of as much run-off as feasible, including diversion of roof gutters to French drains or dispersion trenches, dispersion of road and driveway runoff to vegetative margins, or other similar methods. Storm water shall not be collected and conveyed directly to a natural drainage without passing through some type of active or passive treatment. Said provisions shall be incorporated into the storm drain system plans submitted to the County for plan check.

Implementation of the above mitigation measures would reduce impacts to surface water quality to a less than significant level.

Flooding

The project is located approximately 1,000 feet above sea level and well away from the coastline. The project is not located downslope from any lakes, water storage facilities or creeks. Development of the proposed project will not place housing or structures within a 100-year floodplain, beneath a dam or behind a levee. Inundation due to seiche or tsunamis is not possible. Therefore, the proposed project will result in no impact in regards to flooding or inundation.

Long-term Water Supply

Impact 3.8-4:	Implementation of the proposed project would commit groundwater use to the proposed uses, at a rate of approximately 63.5 acre-feet per year. Groundwater in the Forebay subarea and the Salinas Valley Groundwater Basin would not be substantially affected by the required water withdrawals. Therefore, this is considered a less than significant impact.

Assuming year-round full occupancy, the proposed project is conservatively projected to use 42,380 gallons of potable water per day (CH2MHill 2010c, page 8), which equates to about 47.5 acre-feet of water per year. This water will be reclaimed producing 36,495 gallons per day of reclaimed water which will be used for irrigation. An additional 14,280 gallons per day (16 acre-feet per year) would be used for irrigation. Due to less reclaimed water being available during the initial phases of the project, additional water will be needed for the irrigation. The supplemental irrigation water will be highest in Phase 1 requiring 32,329 gallons per day with reductions being achieved in each phase until build out is accomplished. The projected water use would initially be 84.7 acre-feet per year and would be reduced as the site builds out to 63.5 acre-feet per year (47.5 acre-feet per year potable plus 16 acre-feet per year for irrigation).

The determination of an adequate water supply related to the 1982 General Plan comes from Title 19 of the Monterey County Code (Subdivisions) which requires that a project involving a Tentative Subdivision Map demonstrate a Long Term Water Supply (safe yield.) The definition of safe yield is the amount of water than can be extracted continuously from the basin or hydrologic sub-area without degrading water quality, or damaging the economical extraction of water, or producing unmitigable adverse environmental impacts.

As noted above the Salinas Valley Groundwater Basin has been subject to seawater intrusion, and overdraft of groundwater supplies. New development in this basin without mitigation would have the affect of adding to the degradation of water quality (sea water intrusion) and expanding the overdraft concern unless mitigation is provided. The SVWP was initiated to address seawater intrusion and overdraft within the Salinas Valley Basin.

The certified FEIR for adoption of the 2010 Monterey County General Plan (October 26, 2010, Resolution Nos 10-290 and 10-291) found that "current water supply planning, with mitigation, is adequate to address overdraft and saltwater intrusion in the Salinas Valley up to the 2030 planning horizon (page 4.3-2)." This is supported by the statement:

> *In the Salinas Valley, the SVWP will provide sufficient additional supplies from the system's reservoirs to meet 2030 projected demands and halt further seawater intrusion. The impacts of the 2007 General Plan would be less than significant within the Salinas Valley for water supply during the 2030 planning horizon. The SVWP will substantially reduce summer demand on groundwater resources in the Salinas Valley. This is expected to reduce or halt the seawater intrusion at its current line in the Castroville area. The SVWP, in conjunction with the Monterey County Water Recycling Project (CSIP), is expected to meet both urban and agricultural water needs in the Salinas Valley to 2030.* (Monterey County Water Resources Agency 2001, p 4.3-148)

The FEIR certified for the General Plan contemplated the effects of new development during the 2030 planning horizon and found that the water projects put into place adequately address groundwater overdraft and seawater intrusion. Paraiso Springs is a property identified in the General Plan as being considered for development (See CSV-1.1). While a net deficit may currently exist, the additional water use will not substantially add to the current deficit, and will not interfere with the anticipated balancing effect of the SVWP and CSIP by 2030. The result is that there is a safe yield for the use of water associated with this development in that the project will not adversely affect groundwater quality, will not adversely affect the economic extraction of water, and will not produce unmitigable adverse environmental impacts. The use of between 84.7 and 63.5 acre feet per year is considered a less than significant impact.

The potable water would be produced from two on-site wells capable of a combined production rate of about 196 gallons per minute (the average pumping rate to achieve 42,380 gallons per day would be about 39 gallons per minute). The wells are located at the eastern side of the project site. Following use, the potable water would be treated at an on-site treatment plant and disposed of as surface discharge (including irrigation) within the project site. The pools and spa facilities would utilize hot spring flows, and supplemental irrigation water would be recycled from the potable supply wastewater and pool and spa outflows. Water discharged to the surface would flow off as surface run-off, evaporate, transpire, or percolate into the soil. Most water landing on the surface within coastal groundwater basin valley bottoms will not percolate to groundwater (United States Geological Survey 1995), although, the Forebay subarea has highly permeable soils, and significant recharge in this area is attributed to applied water (Monterey County Water Resources Agency 2006).

When water is pumped from a well, a depression in the groundwater table or potentiometric surface that has the shape of an inverted cone develops around the well. This depression is referred to as the cone of depression and defines the area of the well's radius of influence. The depth and horizontal extent of the cone of depression is a product of the aquifer's characteristics and the pumping rate. When two wells are drilled sufficiently close to one another, the cones of depression can overlap, and drawing water from one well can potentially have an adverse effect on the other well.

The project site is in a very lightly populated area, with few other wells. The nearest irrigated agriculture is located about one mile east of the project site, and nearly two miles from the project well sites; therefore, it assumed that the nearest neighboring well would be no closer than about 7,500 feet. The potential for interference between two adjacent wells can be calculated using the Modified Theis Nonequilibrium equation, with regional values of the aquifer parameters. In the Forebay subarea, a 1,000 gallon per minute well would require a setback of up to 28,000 feet to ensure zero draw-down on a neighboring well, or a setback of 1,150 feet to ensure a drawdown of less than five feet (Bierman Hydro-Geo-Logic 2012). The proposed 196 gallon per minute wells would require about one-fifth the setback, or a maximum of 5,600 feet (for zero drawdown) or 230 feet (for a five-foot drawdown). The wells are located in excess of 5,600 feet from neighboring wells within the Forebay subarea, so no adverse effect would be observed at neighboring wells.

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3.9 LAND USE AND PLANNING

3.9.1 Introduction

This section of the DEIR provides a description of existing land use and planning policies that apply to the project site, and an analysis of impacts regarding land use compatibility and community impacts associated with the proposed project. The current Monterey County General Plan was adopted in October 2010. However, the date that the proposed project was accepted as complete (August 28, 2005) makes the project subject to the policies contained in the 1982 General Plan. As such, the description and analysis within this section is based primarily on the *Monterey County General Plan* (1982 with Amendments through November 5, 1996) and the *Central Salinas Valley Area Plan* (1987*)*, a component of the 1982 General Plan.

3.9.2 Environmental Setting

Region

The project site is located in the unincorporated portion of southern Monterey County. Monterey County contains a broad array of land use types. The largest land group in the county is agricultural land, followed by public and quasi-public lands. Urban development is primarily located along Monterey Bay and in the Salinas Valley. Rural and semi-rural development is scattered throughout the county. The development footprint of the unincorporated area represents less than three percent of the total area of the County. The City of Soledad is located approximately eight miles to the northeast of the project site and the City of Greenfield is located approximately seven miles to the east of the project site.

The project site is bordered to the north, west and south by the Santa Lucia Mountains, and to the east by rural residences and agricultural land. The surrounding land is designated by the *Monterey County General Plan* for farmland and rural grazing uses, and is currently used for agriculture and vineyards (where slope allows), and grazing in the steeper areas.

Project Site

The project site is approximately 235 acres in size and is located between the crest of the Sierra De Salinas and the Salinas Valley. Paraiso Springs Road is a two-lane county road that terminates at the site. There are numerous rural dirt roads that transverse the site.

The project site is visible on the approach from Paraiso Springs Road and is identifiable by several tall palm trees. Several residences are located below and to the east of the site on Paraiso Springs Road. The buildings currently on the site consist of fifteen vernacular cabins along the hillside, a changing room, a recreation room, indoor and outdoor baths, six mobile homes, a lodge, a workshop, a yurt compound, a miner's shack, and several small outbuildings. Several springs and pools are located throughout the site. Refer to Figure 2-3, Site Characteristics, presented earlier.

The *Monterey County General Plan* land use designation for the site is Commercial." The Monterey County Zoning Ordinance (Title 21) designations for the three parcels that make up the project site are as follows:

418-381-021-000: Visitor Serving/Farmland with a Minimum 40-acre Lot Size (VO/F/40)

418-361-004-000: Permanent Grazing/ Visitor Serving/Farmland (PG/40/VO/F/40)

418-381-022-000: Visitor Serving (VO)

3.9.3 Regulatory Background

Monterey County General Plan

The Monterey County General Plan is the broad, comprehensive planning document for the unincorporated areas of the County. The *Monterey County General Plan* contains goals, objectives, and policies to maintain and enhance the County's rural character, natural resources, and economic base. Policies contained within the Monterey County General Plan are intended to allow for adequate residential and industrial growth in areas best suited for development, while restricting urban sprawl and indiscriminate development. At the countywide level, the *Monterey County General Plan* designates all proposed major land uses by one of seven basic designations: Residential, Commercial, Industrial, Agricultural, Resource Conservation, Public/Quasi-Public, and Transportation.

Central Salinas Valley Area Plan

The *Central Salinas Valley Area Plan*, a component of the *Monterey County General Plan*, was prepared under the guidance of the Central Salinas Valley Citizens Advisory Committee, appointed by the Board of Supervisors. The ideal foundation of the Central Salinas Valley Area Plan is preservation of the areas agricultural vitality and rural character. The *Central Salinas Valley Area Plan* attempts to accommodate the valley's land uses by directing growth to areas where development will have the least impact on agricultural activities. Specific areas are designated on the land use plan, which is reserved for future expansion and growth of the cities throughout the annexation process. In the unincorporated areas, the plan directs growth away from remote areas and toward areas where some development has already occurred and where public services and facilities are available. The plan also provides areas for the expansion of industries currently experiencing growth and providing jobs.

Monterey County Zoning Ordinance

The Monterey County Zoning Ordinance (Title 21) was adopted by the Monterey County Board of Supervisors in 1991 and amended several times. The Zoning Ordinance applies to the unincorporated areas outside of the coastal zone. The Zoning Ordinance implements land use designations established in the General and Area Plans, and it has created various zoning districts, in addition to regulations and permit processes that set standards for land uses, including the allowed types, intensity of development, and setbacks.

The project site is designated within the Commercial-Visitor Serving (VO) zoning district. The purpose of the VO zoning district is to service the needs of visitors and professional services to Monterey County.

3.9.4 Analytical Methodology and Significance Threshold Criteria

Methodology

This Land Use and Planning section provides a description of existing land use and planning policies and their relation to the proposed project. This analysis is based primarily on the 1982 General Plan and zoning ordinance. Each of these documents provides goals, policies, and standards intended to guide development in accordance with local objectives. Each of these documents was reviewed for relevant information, and a determination of Project consistency is provided below.

As identified in the introduction to this section, the current Monterey County General Plan was adopted in October 2010. However, the date that the proposed project was accepted as complete (August 2005) makes the projects subject to the policies contained in the 1982 General Plan. As such, the description and analysis within this section is based primarily on the *Monterey County General Plan* (1982 with Amendments through November 5, 1996) and the *Central Salinas Valley Area Plan* (1987*),* a component of the 1982 General Plan.

Significance Threshold Criteria

As described in Appendix G of the CEQA Guidelines, a project may create a significant environmental impact if it would:

- Physically divide an established community.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan; specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

The general plan for a jurisdiction includes goals and policies associated with land use and planning, as described above. Accordingly, a project may create a significant environmental impact if it would conflict with any of these policies. A consistency analysis of the proposed project with the *General Plan* and the *Central Salinas Valley Area Plan* (a component of the *General Plan)* is described below.

Impacts and Mitigation Measures

Divide an Established Community

The project site is located west of and approximately midway between the cities of Soledad and Greenfield in unincorporated Monterey County. Surrounding development consists of existing agricultural uses and rural residential uses located along Paraiso Springs Road. There is no established community in the project vicinity. Therefore the proposed project would not divide an established community. There is no impact.

Conflict with a Habitat Conservation Plan

The project site is not located within a habitat conservation plan or natural community conservation plan area. Therefore, there would not be a potential conflict with such a conservation plan; therefore, there would be no impact.

Conflict with a Land Use Plan or Policy

Impact 3.9-1:	The proposed project would not conflict with any land use plan, policy, or regulation of any agency with jurisdiction over the project including but not limited to the Monterey County General Plan, Central Salinas Valley Area Plan or the Monterey County Zoning Ordinance. This is considered a less than significant impact.

This consistency analysis provides a discussion of whether the proposed project meets the goals and policies of any relevant land use plan, policy, or regulation of any agency with jurisdiction over the project. Relevant documents include the *Monterey County General Plan*, the *Central Salinas Valley Area Plan*, and the Monterey County Zoning Ordinance.

Table 3.9-1, Project Consistency Analysis, below, identifies consistency findings with each relevant policy of the General Plan and Central Salinas Valley Area Plan. A summary and conclusion of consistency with the General Plan, the Central Salinas Valley Area Plan, and the Monterey County Zoning Ordinance follows presentation of the table.

Monterey County General Plan

Overall, the proposed project is consistent with the intent of the Monterey County General Plan policies as outline in Table 3.9-1 and evaluated throughout this EIR. The proposed project will:

- Preserve open space areas to protect scenic vistas and biological resources;
- Incorporate design and construction practices to conserve soil resources, water quality, and environmentally sensitive areas;
- Conserve energy through building and site design;
- Protect human life and structures from seismic and fire hazards;
- Ensure compatible land uses;
- Provide for adequate, safe, and effective transportation facilities; and
- Allow for the adequate provision of public services.

Central Salinas Valley Area Plan

The Area Plans provide supplemental policies that provide further guidance for specific geographic areas to ensure that future development is consistent with the surrounding land uses in these areas. The supplemental policies provide specific guidelines for the types and locations of new development and how this development must be compatible with the existing land uses. Protection of natural resources and the continued economic viability of the agricultural industry are supported through the implementation of these supplemental policies. The Central Salinas Valley Area Plan identifies Paraiso Hot Springs as a Special Treatment Area and notes that "The Paraiso Hot Springs properties shall be designated a STA for recreation and visitor serving land uses." The policies discussed in Table 3.9-1 include standards to guide development in this area.

Table 3.9-1 Consistency Analysis with the Monterey County General Plan and Central Salinas Valley Area Plan

Policy Number	Policy	Consistency Determination
Aesthetics		
Policy 26.1	The County in coordination with the cities shall manage the type, location, timing, and intensity of growth in the unincorporated area	**Consistent.** The project site is designated as "Commercial" in the General Plan. This category applies to areas which are suitable for the development of retail and service commercial uses, including visitor accommodation uses. The project site was an operating resort until approximately 2003. The proposed project is consistent with the historic use and the general plan designated use. Therefore, the proposed project is consistent with this policy.
Policy 26.1.1	The County shall discourage premature and scattered development.	
Policy 26.1.6	Development which preserves and enhances the County's scenic qualities shall be encouraged.	**Consistent.** The proposed project would retain approximately 188 acres as open space to accommodate streams, hiking trails, and trailside overlooks, which is approximately 80% of the project site. The project is also in a location not readily visible from significant public viewing areas. Therefore, the proposed project is consistent with this policy.
Policy 26.1.10	The County shall prohibit development on slopes greater than 30 percent. It is the general policy of the County to require dedication of scenic easement on a slope of 30 percent or greater. Upon application, an exception to allow development on slopes of 30 percent or greater may be granted at a noticed public hearing by the approving authority for discretionary permits or by the Planning Commission for building and grading permits. The exception may be granted if one or both of the following findings are made, based upon substantial evidence: A) There is no alternative which would allow development to occur on slopes of less than 30 percent; or B) The proposed development better achieves the resource protection objectives and policies contained in the Monterey County General Plan, accompanying Area Plans and Land Use Plans, and all applicable master plans.	**Consistent with Mitigation.** Implementation of mitigation measure MM 3.1-2, presented in Section 3.1, Aesthetics and Visual Resources of this EIR, would ensure consistency with Policy 26.1.10 of the Monterey County General Plan by designating slopes greater than 30 percent on the project site as "scenic easements" and would protect the slopes above and around the proposed project to protect the integrity of the natural landforms**.**

Policy Number	Policy	Consistency Determination
Policy 26.1.20	All exterior lighting shall be unobtrusive and constructed or located so that only the intended area is illuminated, long range visibility is reduced, and off-site glare is fully controlled.	**Consistent with Mitigation.** Implementation of mitigation measure MM 3.1-3, presented in Section 3.1, Aesthetics and Visual Resources of this EIR, would ensure that the proposed project would have a less than significant light and glare impact by complying with Policy 26.1.20 in the Monterey County General Plan. Therefore, with mitigation the proposed project is consistent with this policy.
Policy 26.1.6.1 (CSV)	Development shall have appropriate review where it is permitted in sensitive or highly sensitive areas as shown on the Scenic Highways and Visual Sensitivity Map.	**Consistent.** Paraiso Springs is identified as a "highly sensitive area" on the Scenic Highways and Visual Sensitivity Map. Section 3.1, Aesthetics and Visual Resources of this EIR, along with review by County staff, the Planning Commission, and the Board of Supervisors, provides the appropriate review. Therefore, the proposed project is consistent with this policy.
Policy 40.1.2 (CSV)	The County shall pursue measures to obtain scenic road designation for Highways 146 and 25, Arroyo Seco Road, Bitterwater Road, and Elm Avenue.	**Not applicable.** Based on the elevations of the proposed buildings at the project site; the steep terrain, dense vegetation, topography difference, and distance from Arroyo Seco Road, the project site would not be visible from this roadway. Therefore, there are no impacts to scenic vistas and scenic roadways in the project vicinity. Therefore, this policy is not applicable to the proposed project.
Air Quality and Climate Change		
Policy 20.1.2	The County should encourage the use of mass transit, bicycles and pedestrian modes of transportation as an alternative to automobiles in its land use plans.	**Consistent.** The project applicant proposes a shuttle service for non-management employees that would transport the employees to the resort from an existing park-and-ride lot located on Front Street in downtown Soledad. In addition, a shuttle service will also be available for guests arriving at the Monterey Peninsula Airport and for day trips, such as wine tours, and trips to the Monterey Peninsula and the Pinnacles National Monument. Therefore, the proposed project is consistent with this policy.

Policy Number	Policy	Consistency Determination
Policy 20.2.1	The County shall condition approval of all new industrial and commercial development, including major modifications as defined by the Uniform Building Code, on meeting, as a minimum, federal and state ambient air quality standards and the rules and regulations of the Monterey Bay Unified Air Pollution Control District.	**Consistent with Mitigation.** The proposed project would result in long-term regional emissions of criteria air pollutants that would not exceed the MBUAPCD significance thresholds and therefore would not contribute significantly to an existing or projected air quality violation. Implementation of mitigation measure 3.2-1, presented in Section 3.1, Air Quality of this EIR, would reduce fugitive dust emissions from earthmoving activities by approximately 50 percent, depending on the activities conducted, which would ensure that the proposed project does not exceed the MBUAPCD thresholds for short-term construction emissions. Therefore, with mitigation, the proposed project is consistent with this policy.
Policy 14.3.1 (CSV)	The County should encourage energy-efficient business and agricultural practices.	**Consistent with Mitigation.** The applicant-proposed measures address several energy reduction opportunities that appear to be applicable to and feasible for the proposed project. Mitigation Measure 3.4-1 requires additional measures that would contribute to an even greater energy savings. With the implementation of these measures, applicable and feasible reduction opportunities available to the project have been applied. Therefore, with mitigation, the proposed project is consistent with this policy.
Policy 14.3.2 (CSV)	The County should encourage the development and utilization of renewable energy sources such as solar, wind generation, and biomass technologies in the Central Salinas Valley.	**Consistent.** The applicant proposes utilization of renewable energy sources including incorporation of solar energy generation and orientation of buildings to maximum solar exposure (refer to Section 2.3, Project Objectives). Therefore, the proposed project is consistent with this policy.
Biological Resources		
Policy 7.1.1	Development shall be carefully planned in, or adjacent to, areas containing limited or threatened plant communities, and shall provide for the conservation and maintenance of the plant communities.	**Consistent.** No special status plant species are known to be present on the site, and implementation of the proposed project is not anticipated to result in impacts to any special status plant species.
Policy 7.2.1	Landowners and developers shall be encouraged to preserve the integrity of existing terrain and natural vegetation in visually sensitive areas such as hillsides and ridges.	**Consistent with Mitigation.** Implementation of mitigation measure 3.1-2, presented in Section 3.1, Aesthetics and Visual Resources of this EIR, would designating slopes greater than 30 percent on the project site as “scenic easements” and would protect the slopes above and around the proposed project to protect the integrity of the natural landforms and vegetation**.**

Policy Number	Policy	Consistency Determination
Policy 9.1.1	Development shall be carefully planned in areas known to have particular value for wildlife and, where allowed, shall be located so that the reasonable value of the habitat for wildlife is maintained.	**Consistent with Mitigation.** Implementation of mitigation measures 3.3-1a would require replacement habitat for any losses to bat habitat on site. Mitigation measures 3.3-1b through d would require presence/absence pre-construction surveys and construction monitoring to ensure protection/avoidance and if necessary, replacement of habitat. In addition mitigation measures 3.3-2a and b require that the applicant shall comply with all wetland/waterway/riparian habitat replacement requirements and/or impact minimization measures stipulated in the approved regulatory permits. All wetlands/waters and/or riparian habitat impacts must be fully mitigated, either through habitat replacement/restoration, habitat creation, or purchase of wetland/riparian habitat credits from an approved mitigation bank. Finally mitigation measure 3.3-3 requires that measures are taken to ensure wildlife corridors and migratory bird corridors, including nests are not disturbed.
Policy 9.1.2	Development shall be carefully planned in areas having high value for fish and wildlife reproduction.	**Consistent with Mitigation.** Mitigation measure 3.3-3 requires that measures are taken toe ensure wildlife corridors and migratory bird corridors, including nests are not disturbed. See also mitigation measure to protect habitat as discussed under Policy 9.1.1 above.
Cultural and Historic Resources		
Policy 12.1.1	The County shall take such action as necessary to compile information on the location and significance of its archaeological resources so this information may be incorporated into the environmental or development review process.	**Consistent.** Paraiso Springs is identified as an area of high archaeological sensitivity on Figure 4 – Cultural Resources, and the "Paraiso Springs and Archaeological Site" is listed as a "Structure of Architectural Significance" in Table 2 of the Central Salinas Valley Area Plan. The identified cultural significance of the site has been taken into consideration in environmental evaluation of the site (refer to Section 3.5 Cultural Resources). Therefore, the proposed project is consistent with this policy.
Policy 12.1.3	All proposed development, including land divisions, within high sensitivity zones shall require an archaeological field inspection prior to project approval.	**Consistent.** Several archaeological field inspections have been conducted for the site and the road improvement area. These evaluations have been taken into consideration in environmental evaluation of the site (refer to Section 3.5 Cultural Resources of this EIR). Therefore, the proposed project is consistent with this policy.
Policy 12.1.4	All major projects (i.e., 2.5 acres or more) that are proposed for moderate sensitivity zones, including land divisions, shall require an archaeological field inspection prior to project approval.	**Consistent.** See discussion regarding consistency determination with Policy 12.1.3 above. The proposed project is consistent with this policy.

Policy Number	Policy	Consistency Determination
Policy 12.1.6	Where development could adversely affect archaeological resources, reasonable mitigation procedures shall be required prior to project approval.	**Consistent with Mitigation.** Mitigation measures 3.5-2 a-c and 3.5-3a-c, presented in Section 3.5 Cultural Resources of this EIR, are required to ensure that the project does not result in advertent damage to known or yet undiscovered archaeological resources in known archaeological sensitivity areas. Therefore, the proposed project is consistent with this policy.
Policy 12.1.7	All available measures, including purchase of archaeological easements, dedication to the County, tax relief, purchase of development rights, consideration of reasonable project alternatives, etc., shall be explored to avoid development on sensitive archaeological sites.	**Consistent with Mitigation.** See discussion regarding consistency determination with Policy 12.1.6 above.
Policy 52.1.1	The County shall compile and maintain a current inventory of cultural resources in unincorporated areas of the County and encourage the same of incorporated cities.	**Consistent.** See discussion regarding consistency determination with Policy 12.1.1 above.
Policy 28.1.1.1 (CSV)	Recreation and visitor serving land uses for the Paraiso Hot Springs property may be permitted in accordance with a required comprehensive development plan. The resort may include such uses as a lodge, individual cottages, a visitor center, recreational vehicle accommodations, restaurant, shops, stables, tennis courts, aquaculture, mineral water bottling, hiking trails, vineyards, and orchards. The plan shall address fire safety, access, sewage treatment, water quality, water quantity, drainage, and soil stability issues.	**Consistent.** The proposed project is for development of a resort that includes a hotel, timeshare units, visitor center, restaurant, vineyard and recreational facilities is therefore, consistent with the uses outlined in Policy 28.1.1.1 (CSV). The proposal includes plans and provisions to address fire safety, access, sewage treatment, water quality, water quantity, drainage, and soil stability issues as evaluated in this EIR. Where impacts have been identified in these areas, appropriate mitigation is identified. Therefore, the proposed project is consistent with this policy.
Policy 12.1.8 (CSV)	The Central Salinas Valley Archaeological Sensitivity Map shall be used to identify archaeological resources within the Planning Area. The map shall be updated when new information becomes available.	**Consistent.** See discussion regarding consistency determination with Policy 12.1.1 above.

Policy Number	Policy	Consistency Determination
Geology and Soils		
Policy 3.1.1	Erosion control procedures shall be established and enforced for all private and public construction and grading projects.	**Consistent with Mitigation.** Implementation of mitigation measure 3.5-5a would reduce impacts from accelerated erosion to a less than significant level by requiring the project applicant prepare a SWPPP and implement an erosion control plan for the proposed project. Therefore, with mitigation, the proposed project is consistent with this policy.
Policy 3.2.2	Land having a prevailing slope above 30 percent shall require adequate special erosion control and construction techniques.	**Consistent with Mitigation.** Implementation of mitigation measures 3.5-1a and 3.5-3a, -b and c in Section 3.5, Geology and Soils of this EIR, would require compliance with California Department of Mines & Geology Special Publication 117 engineering measures, and the most recent Building Code requirements to address indirect slope-failure. Mitigation measures 3.5-4a and b would ensure that the potential for landslide is reduced to a less than significant level by requiring preparation of a Final Geologic and Soil Engineering Feasibility Report prior to issuance of a grading permit.
Policy 15.1.2	Faults classified as "potentially active" shall be treated the same as "active faults" until geotechnical information demonstrating that a fault is not "active" is accepted by the County.	**Consistent.** The closest earthquake active fault zone to the project site is the San Andreas Fault, located 30-km to the northeast. Based on the distance of the nearest faults to the project site, the proposed project would not expose people or property to ground rupture and no impact is expected. Therefore, the potential for ground surface rupture due to faulting is considered to be low and no mitigation is required. Therefore, the proposed project is consistent with this policy.
Policy 15.1.3	The lands within one-eighth mile of active or potentially active faults shall be treated as a fault zone until accepted geotechnical investigations indicate otherwise.	**Consistent.** See discussion under Policy 15.1.2 above.
Policy 15.1.4	All new development and land divisions in designated high hazard zones shall provide a preliminary seismic and geologic hazard report which addresses the potential for surface ruptures, ground shaking, liquefaction and landslides before the application is considered complete. This report shall be completed by a registered geologist and conform to the standards of a preliminary report adopted by the County.	**Consistent.** The proposed project would be constructed in Monterey County, a region of high seismic risk, but the site is not located within a California Earthquake Fault Zone. A Geologic and Soil Engineering Feasibility Report was prepared in 2004 by a registered geologist (Brian Papurello with Landset Engineering) for the project (Landset 2004). Therefore, the proposed project would be consistent with this policy.

Policy Number	Policy	Consistency Determination
Policy 15.1.5	A detailed geological report shall be required for all standard subdivisions. In high hazard areas, this report shall be completed by a registered geologist, unless a waiver is granted, and conform to the standards of a detailed report adopted by the County.	**Consistent.** A Geologic and Soil Engineering Feasibility Report was prepared in 2004 by a registered geologist (Brian Papurello with Landset Engineering) for the project (Landset 2004). Therefore, the proposed project would be consistent with this policy.
Policy 15.1.8	The County should require a soils report on all building permits and grading permits within areas of known slope instability or where significant potential hazard has been identified.	**Consistent with Mitigation.** A Geologic and Soil Engineering Feasibility Report was prepared in 2004 by Landset Engineering for the project. In addition, mitigation measure 3.5-1a, presented in Section 3.5, Geology and Soils of this EIR, requires preparation of a seismic design report for the project consistent with the most current version of the California Building Code prior to building permit approval. Recommendations contained within the Geologic and Soil Engineering Feasibility Report, prepared by Landset Engineers (2004) must be referenced and incorporated into the seismic design report. Mitigation measure 3.5-3a requires preparation of a site-specific supplemental liquefaction investigation incorporating measures as recommended in the Geologic and Soil Engineering Feasibility Report prepared by Landset Engineering (2004) prior to issuance of a grading permit. Mitigation measure 3.5-4a requires preparation of a Final Geologic and Soil Engineering Feasibility Report prior to the issuance of a grading permit. Mitigation measure 3.5-5a requires preparation of an Erosion Control Plan and SWPPP prior to the issuance of a grading permit. Therefore, the proposed project would be consistent with this policy.
Policy 15.1.11	For high hazard areas, the County should condition development permits based on the recommendations of a detailed geological investigation and soils report.	**Consistent with Mitigation.** See discussion under Policy 15.1.8 above.

Policy Number	Policy	Consistency Determination
15.1.1.1 (CSV)	The Central Salinas Valley Seismic Hazards Map shall be used to delineate high seismic hazard areas addressed by the countywide General Plan. Areas shown as moderately high, high, and very high hazard shall be considered as "high hazard" areas for the purpose of applying General Plan policies. The map may be revised when new accepted geo-technical information becomes available.	**Consistent.** The site has not been mapped as an area of moderately high, high, and very high hazard, as indicated on the Central Salinas Valley Area Plan Seismic Hazards Map. However seismic shaking hazard is ubiquitous for this region. And all structures within Monterey County, including the proposed project, are required to be designed in accordance with the latest edition of the California Building Code criteria for Seismic Zone IV. Therefore, the proposed project would be consistent with this policy.
Hazards and Hazardous Materials		
Policy 17.3.3	The County shall encourage all new development to be located within the response time of 15 minutes from the fire station responsible for serving the parcel. If this is not possible, on-site fire protection systems (such as fire breaks, fire-retardant building materials, and/or water storage tanks) approved by the fire jurisdiction must be installed or development may only take place at the lowest density allowed for the parcel by the General Plan.	**Consistent.** The project site is located within the Mission Soledad Rural Fire Protection District (hereinafter "District"); with a station located at 525 Monterey Street in the City of Soledad. Backup fire protection services would be provided by the City of Soledad Fire Department. These stations are a little more than nine miles from the project site with an estimated drive time of more than 15 minutes. The proposed project would include a fire protection system, which would consist of hydrant network, pipeline and sprinkler system, and a water reservoir for the project site (see Figure 2-13: Fire Protection Plan presented as a component of the project description for this EIR). Therefore, the proposed project would be consistent with this policy.
Policy 17.3.4	The County shall require all new development to have adequate water available for fire suppression. Water availability can be provided from a conventional water system; from an approved alternative water system if within 300 feet of a habitable structure; by the fire fighting equipment of the fire district within which the property is located; or by an individual water storage facility—water tank, swimming pool, etc.--on the property itself. The fire and planning departments shall determine the adequacy and location of individual water storage to be provided.	**Consistent.** A water reservoir of up to 500,000 gallons will be provided on-site to support the hydrant and commercial building sprinkler systems. The water reservoir will consist of a steel tank, located at the west end of the development, above the western-most condominium units. Assuming a pressure of 40 psi will be required at the highest hydrant (elevation approximately 1305 ft), this tank will need to be located above elevation 1,410 ft. Note: The precise storage volume and type of storage will be established through a detailed engineering study performed during the design development phase of the project. Therefore, the proposed project would be consistent with this policy.

Policy Number	Policy	Consistency Determination
Policy 17.4.1	All residential, commercial, and industrial structural development (not including accessory uses) in high and very high fire hazard areas shall incorporate recommendations by the local fire district before a building permit can be issued.	**Consistent.** County staff will require the project to incorporate any recommendations that may be made by the fire district. Therefore, the proposed project is consistent with this policy.
Policy 17.4.7	The County shall require all subdivisions, multi-unit residential complexes, and commercial and industrial complexes to obtain, prior to permit approval, a statement from the fire department that adequate structural fire protection is available within minimum response time established by this Plan.	**Consistent.** County staff will require the applicant to obtain a statement from the fire department that adequate structural fire protection is available. Therefore, the proposed project is consistent with this policy.
Policy 17.4.13 (CSV)	The Central Valley Fire Hazards Map shall be used to identify areas of high and very high fire hazards for the purpose of applying General Plan policies regarding fire.	**Consistent.** The site is located in a very high fire hazard Area by the Central Salinas Valley Area Plan (1987) Fire Hazards Map. The Project includes fire protection plan for the site. Also, upon approval, the Project would be required by the Monterey County to be in compliance with the goals associated with fire hazards. Therefore, the proposed project is consistent with this policy.
Hydrology and Water Quality		
Policy 5.1.1	Vegetation and soil shall be managed to protect critical watershed areas.	**Consistent with Mitigation.** Implementation of mitigation measure MM 3.5-5 and MM 3.8-2 would require that the project applicant contract with a registered engineer to prepare an erosion control plan, and a Storm Water Pollution Prevention Plan (SWPPP), and a final drainage plan. The SWPPP shall document best management practices (filters, traps, bio-filtration swales, etc.) to ensure that urban runoff contaminants and sediment are minimized during site preparation, construction, and post construction periods. The final drainage plan shall include mitigation measures that shall reduce the volume and runoff rate of storm water flow. Mitigation measure 3.8-3 would incorporate water quality control measure in the drainage design to reduce impacts to surface water quality to a less than significant level.
Policy 5.1.2	Land use and development shall be accomplished in a manner to minimize runoff and maintain groundwater recharge in vital water resource areas	**Consistent with Mitigation.** The project calls for recharging of groundwater by taking secondary treated water and using drip irrigation throughout the development to promote reuse of water and water percolation. In addition, Implementation of mitigation measure MM 3.8-2 would require preparation of a final drainage plan to detain the difference between the 100-year post-development runoff rate and the 10-year pre-development runoff rate. In addition, mitigation measure 3.8-3 would incorporate water quality control measures in the drainage design.

Policy Number	Policy	Consistency Determination
Policy 5.2.2	The County shall establish special procedures for land use, building locations, grading operations, and vegetation removal adjacent to all waterways and significant water features.	**Consistent with Mitigation.** Mitigation measures 3.3-2 a - b require that the Applicant comply with all wetland/riparian habitat replacement requirements and/or impact minimization measures stipulated in the approved regulatory permits. All wetlands/waters and/or riparian habitat impacts must be fully mitigated, either through habitat replacement/restoration, habitat creation, or purchase of wetland/riparian habitat credits from an approved mitigation bank. Implementation of this mitigation will provide consistency with the intent of Policy 5.2.2.
Policy 6.1.1	Increased uses of groundwater shall be carefully managed, especially in areas known to have ground water overdrafting.	**Consistent.** Implementation of the proposed project would commit groundwater use to sustain the proposed uses, at a rate of approximately 63.5 acre-feet per year. Some of this water would be reclaimed (approximately 15 acre-feet per year). The projected annual water use of 48.5 acre feet would amount to about one and one-quarter percent of the surplus in the Forebay Aquifer Subbasin water budget. Groundwater in the Forebay subarea and the greater Salinas Valley Groundwater Basin would not be substantially affected by the required water withdrawals. Therefore, the proposed project would be consistent with this policy. Refer to section 3.8 Hydrology and Water Quality of this EIR
Policy 6.1.2	Water conservation measures for all types of land uses shall be encouraged.	**Consistent.** The proposed project incorporates a system to utilize reclaimed water for irrigation. See response to Policy 6.1.1 above.
Policy 6.1.3	New development shall be phased to ensure that existing groundwater supplies are not committed beyond their safe long-term yields in areas where such yields can be determined by both the Director of Environmental Health and the Flood Control and Water Conservation District. Development levels which generate a water demand exceeding the safe long-term yields of local aquifers shall only be allowed when additional-satisfactory water supplies are secured.	**Consistent.** Implementation of the proposed project would commit groundwater use to sustain the proposed uses, at a rate of approximately 63.5 acre-feet per year. Groundwater in the Forebay subarea and the greater Salinas Valley Groundwater Basin would not be substantially affected by the required water withdrawals. Please refer to section 3.8 Hydrology and Water Quality of this EIR.
Policy 21.2.1	The County shall require all new and existing development to meet federal, state, and county water quality regulations.	**Consistent with Mitigation.** See response to Policy 5.1.1 above.

Policy Number	Policy	Consistency Determination
Policy 21.2.3	Residential, commercial, and industrial developments which require 20 or more parking spaces shall include oil, grease, and silt traps, or other suit able means, as approved by the Monterey County Surveyor, to protect water quality; a condition of maintenance and operation shall be placed upon the development.	**Consistent with Mitigation.** Mitigation measure 3.8-3 would incorporate water quality control measure in the drainage design reducing potential impact to surface water quality to a less than significant level. Also, see response to Policy 5.1.1 above.
Policy 21.3.1	The County should support sewage treatment projects that reduce contamination of surface and groundwater to acceptable levels.	**Consistent.** The proposed project includes construction of a new wastewater collection and treatment and reclaimed system as identified in the Estimated Wastewater Production and Proposed Treatment, Irrigation, and Storage report (CH2MHill 2010b). The wastewater treatment facility would consist of a membrane bioreactor (MBR) combined with ultraviolet light (UV) disinfection wastewater treatment plant, which would include fine screening at the head of the treatment plant The biological process would be designed to achieve nitrate-nitrogen levels of less than 10 mg/L, which is the drinking water standard. Therefore, the proposed project is consistent with this policy.
Policy 21.3.2	The County shall encourage the investigation, under supervision of County health officials, of the cost-effectiveness, reliability and health acceptability of alternative wastewater disposal methods. The County should approve alternate wastewater disposal methods when they are safe and acceptable to the Environmental Health Department.	**Consistent.** See discussion under Policy 21.3.1 above.
Policy 21.3.3	No division of land or use permit for residential, commercial, or industrial uses shall be approved without proof that an adequate waste disposal system can be developed.	**Consistent.** See discussion under Policy 21.3.1 above.

Policy Number	Policy	Consistency Determination
Policy 16.2.1.1 (CSV)	Site plans for new development shall indicate all floodplains, flood hazards, perennial or intermittent streams, creeks, and other natural drainages. Development shall not be allowed to occur within these drainage courses nor shall development be allowed to disturb the natural bans and vegetation along these drainage courses, unless such disturbances are approved by the Flood Control and Water Conservation District. Development shall adhere to all regulations and ordinances related to development in flood plains.	**Consistent with Mitigation.** Mitigation measures 3.3-2a and b in the Biological Resources section of this EIR requires that the applicant comply with all wetland/waterway/riparian habitat replacement requirements and/or impact minimization measures stipulated in the approved regulatory permits. All wetlands/waters and/or riparian habitat impacts must be fully mitigated, either through habitat replacement/restoration, habitat creation, or purchase of wetland/riparian habitat credits from an approved mitigation bank.
Policy 16.2.1.2 (CSV)	Increased stormwater runoff from urban development shall be controlled to mitigate impacts on agricultural lands located downstream.	**Consistent.** The land below the site is currently used for agriculture and vineyards (where slope allows), and grazing in the steeper areas. However, runoff from the project will be controlled as identified in Section 3.8 of this EIR (Hydrology and Water Quality). County policy requires that runoff from the design storm event not exceed a 10-year event. Therefore the project will be consistent with this policy.
Policy 21.1.2.1 (CVS)	Groundwater recharge areas must be protected from all sources of pollution. Groundwater recharge systems shall be designed to protect groundwater from contamination and shall be approved by both the Director of Environmental Health and the Flood Control and Water Conservation District.	**Consistent with Mitigation.** See response to Policy 5.1.2 in the Hydrology and Water Quality section above
Policy 21.3.1.4 (CVS)	Development shall meet both water quality and quantity standards expressed in Title 22 of the California Administrative Code and Title 15.04 of the Monterey County Code subject to the review of the Director of Environmental Health.	**Consistent.** The planned treated effluent disposal method is land application on the site. The wastewater treatment and distribution system would be designed to produce recycled water that meets the unrestricted use requirements established in Section 60301.230 of Title 22 of the CCR and Title 15.04.

Policy Number	Policy	Consistency Determination
Land Use and Planning		
Policy 26.1.4.3	A standard tentative subdivision map and/or vesting tentative map and/or Preliminary Project Review Subdivision map application for either a standard or minor subdivision shall not be approved until: (1) The applicant provides evidence of an assured long-term water supply in terms of yield and quality for all lots which are to be created through subdivision. A recommendation of the water supply shall be made to the decision making body by the County's Health Officer and the General Manager of the Water Resources Agency, or their respective designees. (2) The applicant provides proof that the water supply to serve the lots meets both the water quality and quantity standards as set forth in Title 22 of the California Code of Regulations, and Chapters 15.04 and 15.08 of the Monterey County Code subject to the review and recommendation by the County's Health Officer to the decision making body.	**Consistent with Mitigation.** The project includes Standard Subdivision (Vesting Tentative Map) to allow the merger and re-subdivision of three parcels into 23 lots. (1) The project has evidence of a long-term water supply as discussed in Section 3.8 of this EIR (Hydrology and Water Quality). (2) The proposed project would have sufficient water supplies available to serve the proposed project from existing resources, and new or expanded entitlements are not needed. However, the water supply for the proposed project currently exceeds the public health standard of 1.0 mg/L for fluoride. Mitigation Measure 3.11-2 will be required to ensure the proposed water systems improvements meet required standards Therefore, with mitigation, the proposed project is consistent with this policy.
Policy 27.3.2	The County shall encourage that open space be provided within and on the fringes of residential areas.	**Consistent.** The proposed project would retain approximately 188 acres as open space to accommodate streams, hiking trails, and trailside overlooks. Therefore, the proposed project is consistent with this policy.
Policy 28.1.1	The County shall designate land for commercial activities sufficient to support and serve the projected population while attempting to minimize conflicts between commercial and other uses.	**Consistent.** The project site has a "Commercial" land use designation and has been identified in the Salinas Valley Area Plan as a "Special Treatment Area: Paraiso Hot Springs." The proposed project is for development of a resort that includes a hotel, timeshare units, visitor center, restaurant, vineyard and recreational facilities is consistent with the Commercial land use designation as well as uses outlined in the provisions for the Special Treatment Area: Paraiso Hot Springs. The project site operated as a resort from approximately 1875 until 2003 and its continued operation as a resort would not introduce a conflict with surrounding land use. Therefore, the proposed project would be consistent with this policy.

Policy Number	Policy	Consistency Determination
Policy 28.1.4	A mix of residential and commercial uses shall be allowed in instances where good site design and utilization of the property can be demonstrated.	**Consistent.** The proposed project is for development of a resort that includes a mix of uses –including hotel, timeshare units, visitor center, restaurant, vineyard and recreational facilities is consistent with the Commercial land use designation as well as uses outlined in the provisions. The Monterey county Planning Commission and Board of Supervisors will determine if the project results in good site design and utilization of the property. Therefore, the proposed project is consistent with this policy.
Policy 34.1.1	The County shall encourage clustering of all types of development, where appropriate, in order to allow for a portion of each project site to be dedicated as permanent open space.	**Consistent.** The proposed project will include approximately 188 acres of open space with amenities such as hiking trails, trailheads, naturist areas, and trailside overlooks. The applicant is required to work with the county to obtain any easements associated with these recreation trails, as required. Therefore, the proposed project would be consistent with this policy.
Policy 28.1.1.2 (CSV)	Recreation and visitor-serving commercial uses shall only be allowed if it can be proven that: (1) areas identified by the Flood Control and Water Conservation District as prime groundwater recharge areas can be preserved and protected form sources of pollution as determined by the Director of Environmental Health and the Flood Control and Water Conservation District; (2) proposed development can be phased to ensure that existing groundwater supplies are not committed beyond their safe long-term yields where such yields can be determined by both the Director of Environmental Health and the Flood Control and Water Conservation District; (3) the main channels of either the Arroyo Seco River or the Salinas River will not be encroached on by development because of the necessity to protect and maintain these areas for groundwater recharge, preservation of riparian habitats, and flood flow capacity as determined by the Flood Control and Water Conservation District; (4) the proposed development meets both water quality and quantity standards expressed in Title 22 of the California Administrative Code and Title 15.04 of the Monterey County Code as determined by the Director of Environmental Health;	**Consistent with Mitigation** (1) See response to Policy 5.1.2 in the Hydrology and Water Quality section above (2) Groundwater in the Forebay subarea and the greater Salinas Valley Groundwater Basin would not be substantially affected by the proposed project's required water withdrawals. (3) The proposed project will not encroach on the main channels of either the Arroyo Seco River or the Salinas River. (4) Mitigation provided in section 3.8 Hydrology and Water Quality ensures that water quality standards are met. (5) The project does not include any septic tanks and instead proposes an on-site waste treatment system. Therefore, this portion of the policy is not applicable to the proposed project. (6) See response to Policy 5.1.1 in the Hydrology and Water Quality section above Therefore, the proposed project is consistent with this policy.

Policy Number	Policy	Consistency Determination
	(5) The proposed development meets the minimum standards of the Regional Water Quality Control Basin Plan when septic systems are proposed and also will not adversely affect groundwater quality, as determined buy the Director of Environmental Health; and (6) The proposed development will not generate levels of runoff which will either cause erosion or adversely affect surface water resources as determined by the Flood Control and Water Conservation District.	
Policy 28.1.1.3 (CVS)	All recreation and visitor-serving commercial land uses shall require a use permit on sites of 10 acres or less. On sites greater than 10 acres, visitor serving recreation and commercial uses may be permitted in accordance with both a use permit and a required comprehensive development plan. The comprehensive development plan shall address hydrology, water quantity and quality, sewage disposal, fire safety, access, drainage, soils, and geology.	**Consistent.** The project includes development on more than 10 acres. The proposed project includes a request for a Combined Development permit that includes a General Development Plan that addresses hydrology, water quantity and quality, sewage disposal, fire safety, access, drainage, soils, and geology. Therefore, the proposed project is consistent with this policy.
Noise		
Policy 22.2.1	The County shall require new development to conform to the noise parameters established by Table 6, Land Use Compatibility for Exterior Community Noise Environments.	**Consistent with Mitigation.** The proposed project was evaluated using noise standards adopted by the County of Monterey. Operational noise impacts were determined to be less than significant. Mitigation has been provided to ensure short-term construction noise impacts are reduced to a less than significant level (mitigation measure 3.9-1 in Section 3.9, Noise of this EIR). Therefore, with mitigation, the proposed project is consistent with this policy.
Policy 22.2.2	The County shall require the appropriate standards of soundproofing construction in all multiple-residential structures as specified in the Building Code.	**Consistent with Mitigation.** See discussion in response to Policy 22.2.1 above.
Policy 22.2.5	The County, in accordance with Table 6, should require ambient sound levels to be less at night (10 p.m. to 7 a.m.) than during the day.	**Consistent with Mitigation.** See discussion in response to Policy 22.2.1 above.

Policy Number	Policy	Consistency Determination
Public Services and Utilities (Water Resources)		
Policy 5.1.1	Vegetation and soil shall be managed to protect critical watershed areas.	**Consistent with Mitigation.** See response to Policy 5.1.1 in the Hydrology and Water Quality section above.
Policy 5.1.2	Land use and development shall be accomplished in a manner to minimize runoff and maintain groundwater recharge in vital water resource areas.	**Consistent with Mitigation.** See response to Policy 5.1.2 in the Hydrology and Water Quality section above.
Policy 6.1.1	Increased uses of groundwater shall be carefully managed, especially in areas known to have groundwater overdrafting.	**Consistent.** See discussion in response to Policy 6.1.1 under Hydrology and Water Quality above.
Policy 6.1.2	Water conservation measures for all types of land uses shall be encouraged.	**Consistent.** See discussion in response to Policy 6.1.2 under Hydrology and Water Quality above.
Public Services and Utilities (Fire Hazards)		
Policy 17.3.1	In no case shall a roadway be less than 12 feet wide. Determination of the width of an all weather surface shall be made at the time of subdivision approval. Further, the County shall revise its subdivision ordinance to address road standards, including minimum width, height clearance, gradient and materials; these standards shall pertain to all new development. Minimum road widths of all new driveways, roads, and streets shall be designed, constructed and maintained according to adopted County standards.	**Consistent.** Fire protection measures implemented within the project site would include 12-foot wide access roads by the Spa, Fitness Center, and condominiums, adequate turn-arounds, and access road bridge designed for highway loading standards. The proposed project includes a Roadway Improvement Plan (Atlas Land Surveys 2012) that was prepared by the project applicant to address the needed improvements on Paraiso Springs Road. Project access and circulation would be considered adequate to provide emergency access to the proposed project (refer to Section 3.12 transportation and traffic) therefore, the proposed project is consistent with this policy.

Policy Number	Policy	Consistency Determination
Policy 17.3.3	The County shall require all new development to be located within the response time of 15 minutes from the fire station responsible for serving this parcel. If this is not possible, on-site fire protection systems (such as fire breaks, fire retardant building materials, and/or water storage tanks) approved by the fire jurisdiction must be installed or development may only take place at the lowest density allowed for the parcel by the General Plan.	**Consistent.** See discussion in response to Policy 17.3.3 under Hazards and Hazardous materials above.
Policy 17.3.4	The County shall require all new development to have adequate water available for fire suppression. Water availability can be provided from a conventional water system; from an approved alternative water system if within 300 feet of a habitable structure; by the fire fighting equipment of the fire district within which the property is located; or by an individual water storage facility – water tank, swimming pool, etc – on the property itself. The fire and planning departments shall determine the adequacy and location of individual water storage to be provided.	**Consistent.** See discussion in response to Policy 17.3.4 under Hazards and Hazardous materials above.
Public Services and Utilities (Fire and Law Enforcement Services)		
Policy 17.3.3	The County shall encourage all new development to be located within the response time of 15 minutes from the fire station responsible for serving the parcel. If this is not possible, on-site fire protection systems (such as fire breaks, fire-retardant building materials, and/or water storage tanks) approved by the fire jurisdiction must be installed or development may only take place at the lowest density allowed for the parcel by the General Plan.	**Consistent.** See discussion in response to Policy 17.3.3 under Hazards and Hazardous materials above.

Policy Number	Policy	Consistency Determination
Policy 46.3	Consider adequate levels of police protection and crime investigations for the protection of life and property in reviewing new development proposals.	**Consistent.** The project site is located in Beat #1 of the County Sheriff's patrol, which covers a large area and has relatively long response times. An increased number of visitors may result in an increase of crime within the project site and the project vicinity. However, the proposed project would have on-site security, with the Sheriff's department acting as a second responder. In addition, all visitors would pass through a security gate at the main entrance, which would significantly reduce crime within the project site. Therefore, the proposed project would be consistent with this policy.
Transportation and Traffic		
Policy 37.2.1	Transportation demands of proposed development shall not exceed an acceptable level of service for existing transportation facilities, unless appropriate increases in capacities are provided for.	**Consistent.** The Paraiso Springs Road/Clark Road intersection and the ten study roadway segments would operate at LOS A with the exception of Arroyo Seco Road between Fort Romie Road and Highway 101, which would operate at LOS B. In accordance with the County of Monterey significance criteria, this is considered an acceptable level of service. Therefore, the proposed project is consistent with Policy 37.2.1.
Policy 37.5.1	The design and location of new development shall consider and incorporate provisions for appropriate transportation modes.	**Consistent**. The location of the proposed project is in a rural area. To reduce the amount of traffic to the project site, the proposed project would provide a private shuttle service for employees from the park and ride lot in Soledad and for guests from the Monterey Peninsula Airport, as well as to activities outside of the area.

Monterey County Zoning Ordinance

Title 21 of the Monterey County Municipal Code is the Zoning Ordinance for inland areas of the unincorporated County. Section 21.22 of Title 21 establishes regulations for development within VO (Visitor Serving) zoning district. The proposed project would implement the Zoning Ordinance regulations for the project site.

More specifically, the use of the proposed project is consistent with the applicable standards of the VO zoning district. The proposed project will include a General Development Plan for the construction of a hotel/resort spa, timeshare facility, and associated accessory uses, which will accommodate both overnight and day guests. These uses would require the proposed project obtain both administrative permits and use permits in accordance with Section 21.22.050 and Section 21.22.060. As shown in the building elevations for the proposed project in Figures 2-9a through Figure 2-9h, presented in the Project Description section of this EIR (Section 2.0), heights of the proposed project would not exceed the structure height regulations included in Section 21.22.070 of the *Monterey Zoning Ordinance*, which is 35 feet unless superseded by a structure height limit noted on the zoning map.

The proposed project would also include measures associated with reduction in vehicles trips, pursuant to Section 21.22.080, which requires compliance with Section 21.64.250. The proposed project would include a shuttle for non-management employees from the City of Soledad park and ride lot on Front Street in downtown Soledad, as well as shuttle for guests from the Monterey Peninsula Airport. In addition, the proposed project would intensify, but would not change the use of the project site per the VO zoning district. The proposed project would therefore be consistent with the *Monterey County Zoning Ordinance*.

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3.10 NOISE

3.10.1 Introduction

This section of the DEIR focuses on the assessment of short-term noise associated with construction activities and the long-term operational noise associated with operation of the proposed project. Long-term operational noise associated with the proposed project would include mobile sources (e.g. increased vehicle trips to the project site) and stationary noise sources, such as mechanical equipment associated with operation of the proposed project. Information in this section is primarily based on short-term noise measurements taken at the project site and project vicinity in April 2008 by RBF Consulting, as well as the estimation of traffic volumes prepared for the proposal from the following sources:

- *Paraiso Springs Resort Traffic Analysis Report* (Hatch Mott MacDonald 2008)
- *Paraiso Springs Resort Traffic Analysis Report. Final Report* (Hatch Mott MacDonald 2011)

Impacts associated with the proposed project are evaluated relative to applicable noise level criteria and to the existing ambient noise environment.

Noise Scales and Definitions

Sound is technically described in terms of the loudness (amplitude) of the sounds and frequency (pitch) of the sound. Noise is typically described as any unwanted or objectionable sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by determining sound frequencies in a manner approximating the sensitivity of the human ear.

The decibel scale is logarithmic. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range similar to how the Richter scale measure earthquake magnitudes. In terms of human response to noise, a sound 10 dBA higher than another is perceived to be twice as loud; 20 dBA higher, four times as loud; and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Examples of various sound levels in different environments are shown in Figure 3.10-1, Sound Levels and Human Response.

Characteristics of Sound Propagation and Attenuation

A number of sources, including mobile sources such as automobiles, trucks and airplanes, and stationary sources such as construction sites, machinery, and industrial operations, can generate noise. Noise generated by mobile sources typically attenuates at a rate between 3.0 to 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Mobile transportation sources such as highways that are constructed with hard and flat surfaces, such as concrete or asphalt, register an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, register an attenuation rate of about 4.5 dBA per doubling of distance from the source. Noise generated by stationary

sources typically attenuates at a rate of approximately 6.0 to 7.5 dBA per doubling of distance from the source.

Placing barriers between the noise source and the receiver can reduce sound levels. In general, barriers contribute to decreasing noise levels only when the structure breaks the line of sight between the source and the receiver. Buildings, concrete walls, and berms can act as effective noise barriers. Wooden fences or broad areas of dense foliage also can reduce noise but are less effective than solid barriers.

In most situations, a 3 dBA change in sound pressure level is considered a "just-detectable" difference. A 5 dBA change (either louder or quieter) is readily noticeable, and a 10 dBA change is doubling (if louder) or a halving (if quieter) of the subjective loudness. Sound from a small localized source (approximating a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates or drops-off at a rate of 6 dBA for each doubling of the distance. This decrease, due to the geometric spreading of the energy over an ever-increasing area, is referred to as the inverse square law. However, highway traffic noise is not a single, stationary point source of sound. The movement of the vehicles makes the source of the sound appear to emanate from a line source rather than a point when viewed over some time interval. Since the change in surface area of a cylinder only increases by two times for each doubling of the radius instead of the four times associated with spheres, the change in sound level is 3 dBA per doubling of distance.

Noise Descriptors

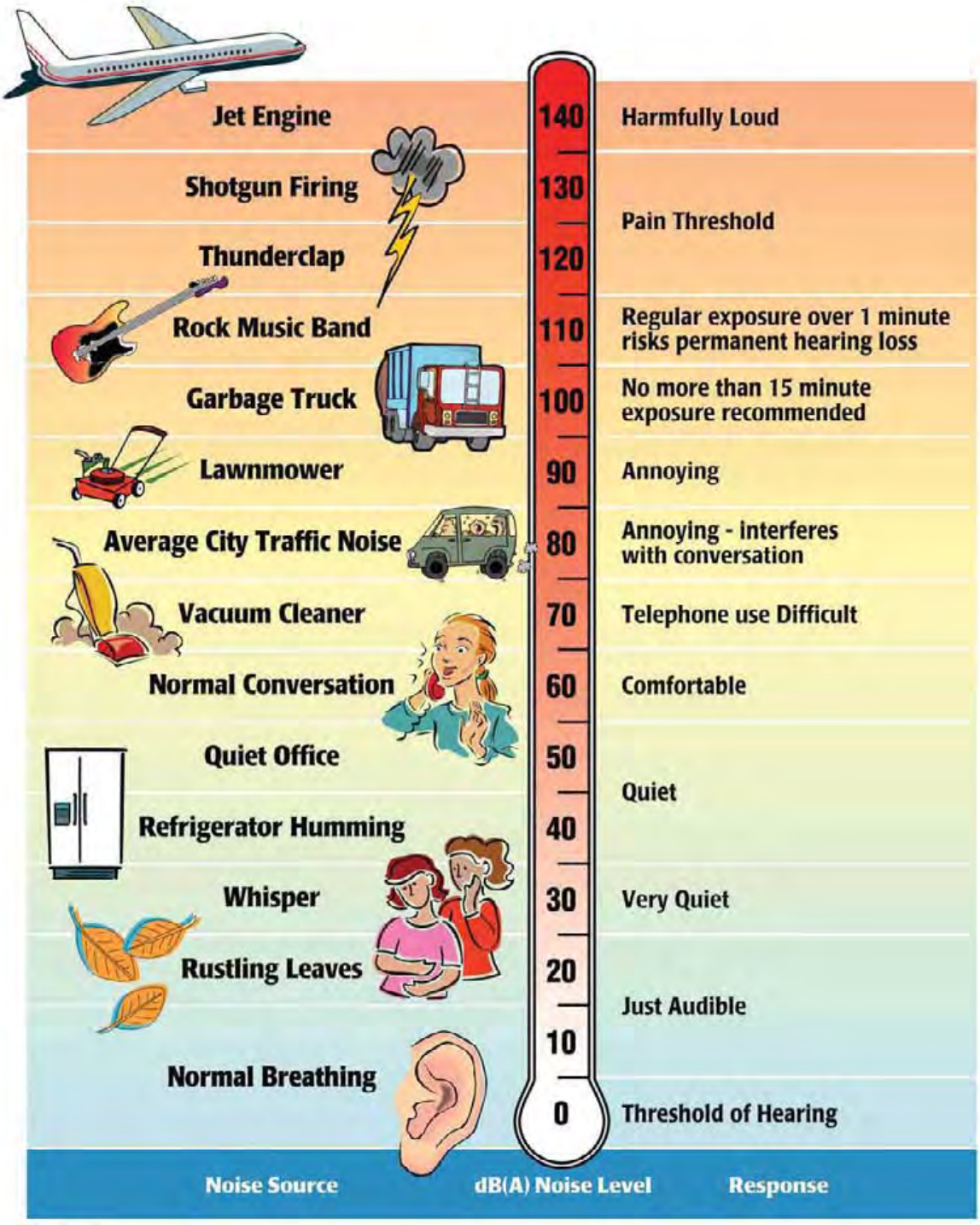
Numerous methods have been developed to measure sound over a period of time. These methods include: (1) the community noise equivalent level (CNEL); (2) the equivalent sound level (L_{eq}); and (3) the day/night average sound level (L_{dn}). These methods are described below.

Community Noise Equivalent Level (CNEL)

The predominant community noise rating scale use in California for land use compatibility assessments is the CNEL. The CNEL reading represents the average of 24 hourly readings of equivalent levels (L_{eq}) based on an A-weighted decibel and adjusted upward to account for increased noise sensitivity in the evening and at night. These adjustments are +5 dBA for the evening (7:00 PM to 10:00 PM) and +10 dBA for the night (10:00 PM to 7:00 AM). CNEL may be indicated by "dBA CNEL" or just "CNEL".

Energy Equivalent Noise Level (L_{eq})

The energy equivalent noise level (L_{eq}) is the sound level containing the same total energy over a given sampling time period. The L_{eq} is the steady sound level which, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period. L_{eq} is typically computed over sampling periods of one, eight, and 24 hours.



Source:

Melville C. Branch and R. Dale Beland, *Outdoor Noise in the Metropolitan Environment*, 1970.

Environmental Protection Agency, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (EPA/ONAC 550/9-74-004)*, March 1974.

Source: (see above)

Figure 3.10-1

Sound Levels and Human Response

Paraiso Springs Resort EIR

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Day/Night Average (L_{dn})

Another commonly used method is the day/night average level (L_{dn}). The L_{dn} measures the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the L_{eq} (the average noise level over a given time period). The L_{dn} is calculated by averaging the L_{eq} for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 PM to 7:00 AM), by adding 10 dBA to account for the increased sensitivity of people to noises that occur at night.

Vibration

Vibration is trembling, quivering, or oscillation motion of the earth. Like noise, vibration is transmitted in waves, but in this case through the earth or solid objects.

One of the challenges with developing suitable criteria for groundborne vibration is the limited research into human response to vibration and more importantly, human annoyance inside buildings. Railroad operations are potential sources of substantial ground vibration depending on distance, the type and the speed of trains, and the type of railroad track. People's response to ground vibration has been correlated best with the velocity of the ground. The velocity of the ground is expressed on the decibel scale. Although not a universally accepted annotation, the abbreviation "VdB" is used in this document for vibration decibels.

Typical background vibration levels in residential areas are usually 50 VdB or lower, well below the threshold of perception for most humans. Perceptible vibration levels inside residences are attributed to the operation of heating and air conditioning systems, doors slams and foot traffic. Construction activities, train operations, and street traffic are some of the most common external sources of vibration that can be perceptible inside residences.

3.10.2 Environmental Setting

Region

The principal sources of noise exceeding 60 dBA in the Central Salinas Valley Planning Area are highway traffic along the U.S. Highway 101 corridor, Southern Pacific Railroad operations, and flight operations at Mesa Del Rey Airport in King City. In general, these sources pose no "hazard" because noise levels outside their respective rights of way do not exceed 60 dBA. Other sources of noise include industrial plants, food processing and packing plants, the landfill sites on Johnson Canyon and Jolon roads, oil wildcatting activities, and agricultural equipment. Occasional military exercises at Fort Hunter Ligget also have significant noise impacts over a wide area.

Existing Noise Environment

Ambient Noise Levels

The project site has not been in operation since 2003; however a caretaker is currently present on-site for security purposes. Therefore, existing ambient noise levels at the project site are very low.

To quantify existing ambient noise levels at the project site, RBF Consulting conducted noise surveys on April 16, 2008 at several locations as shown in Figure 3.10-2, Noise Measurement Locations. The noise measurement sites were representative of existing noise exposure in a given time period (15 minutes) within the project site and project vicinity. According to these measurements (see Table 3.10-1, Project and Vicinity Ambient Noise Measurements), noise levels on the project site are approximately 42.0 L_{eq} dBA and range from 45 to 58.6 L_{eq} dBA in the AM between 9:55 and 10:50 AM off-site along Paraiso Springs Road and Arroyo Seco Road.

Table 3.10-1 Project and Vicinity Ambient Noise Measurements (Short-Term)

Site No.	Location	L_{eq} (dBA)	Time
1	Within the Project Site	42.0	9:30 AM
2	Paraiso Springs Road	45.0	9:55 AM
3	Paraiso Springs Road at Clark Road	44.6	10:15 AM
4	Arroyo Seco Road-South	53.2	10:30 AM
5	Arroyo Seco Road at Los Coaches	58.6	10:50 AM

Source: RBF Consulting 2008

Stationary Noise Sources

The primary sources of stationary noise in the vicinity of project site are from typical agricultural uses (e.g. tractors, etc.).

Mobile Noise Sources

The existing noise environment within the project site and vicinity is influenced primarily by agricultural uses surrounding the project site, as well as surface transportation noise emanating from vehicle traffic on area roadways and from local roadways. The project site is surrounded by agricultural and rural residential land uses. The closest roadway to the project site is Paraiso Springs Road, which is a two-lane road.

3.10.3 Regulatory Background

Regulatory requirements related to environmental noise are typically promulgated at the local level. However, federal and state agencies provide standards and guidelines to local jurisdictions.

State

California Department of Health, Office of Noise Control

The California Department of Health, Office of Noise Control, in Guidelines for the Preparation and Content of Noise Elements of the General Plan (February 1976), provided guidance for the acceptability of designated land uses within specific CNEL contours. Residential uses are normally unacceptable in areas whose CNEL exceeds 70 dBA, and conditionally acceptable within 60 to 70 dBA. Commercial/professional office buildings and businesses are normally acceptable in areas with CNEL up to 70 dBA and normally unacceptable in areas whose CNEL exceeds 75 dBA. Commercial uses are conditionally acceptable in areas with a CNEL between 67 and 77 dBA, depending on noise insulation features and noise reduction requirements.

Title 24

Title 24 of the California Code of Regulations (CCR) establishes standards governing interior noise levels that apply to all new multifamily residential units in California. These standards require that acoustical studies be performed prior to construction at building locations where the existing CNEL exceeds 60 dBA. Such acoustical studies are required to establish mitigation measures that will limit maximum CNEL levels to 45 dBA in any inhabitable room. Although there are no generally applicable interior noise standards pertinent to all uses, many communities in California have adopted a CNEL of 45 as an upper limit for interior noise in residential dwellings.

Local

Monterey County General Plan

The *Monterey County General Plan* was adopted by the Board of Supervisers in 1982. Goal 22 in the Monterey County General Plan aims to "maintain an overall health and quiet environment by trying to achieve living and working conditions free from annoying and harmful sounds." The following polices support this goal and are applicable to the proposed project:

Policy 22.2.1 The County shall require new development to conform to the noise parameters established by Table 6, Land Use Compatibility for Exterior Community Noise Environments.

Policy 22.2.2 The County shall require the appropriate standards of soundproofing construction in all multiple-residential structures as specified in the Building Code.

Policy 22.2.5 The County, in accordance with Table 6, should require ambient sound levels to be less at night (10 p.m. to 7 a.m.) than during the day.

Noise Standards

Monterey County's exterior noise-exposure standards are based on parameters established by the California Department of Health, Office of Noise Control and summarized in Table 3.10-2, County of Monterey Exterior Community Noise Land Use Compatibility. Based on these standards, noise levels of 60 dB CNEL or less at various noise-sensitive receptor locations, including single- and multi-family residences, schools, hospitals, churches, and nursing homes are considered "normally acceptable" and noise levels of 60 to 70 dBA CNEL are considered "conditionally acceptable" with the incorporation of noise insulation and mitigation features.

Although 70 dB CNEL may be considered compatible under these conditions, Monterey County policy as stated in the *Monterey County General Plan* is to mitigate exterior exposure in noise-sensitive land uses to 65 dB CNEL, where feasible. In addition, the Monterey County Noise Control Ordinance prohibits the operation of any device within 2,500 feet of any occupied residential dwelling that produces a noise level exceeding 85 dBA at a distance of 50 feet from the source (County Code, Chapter 10.60, County of Monterey 1988).

Table 3.10-2 County of Monterey Exterior Community Noise Land Use Compatibility

Land Use Category	Noise Ranges (L_{dn}) or CNEL dB			
	I	II	III	IV
Passively used open spaces	50	50-55	55-70	70+
Auditoriums, concert halls, amphitheatres	45-50	50-65	65-70	70+
Residential- low density single family, duplex, mobile home	50-55	55-70	70-75	75+
Residential – multi-family	50-60	60-70	70-75	75+
Transient lodging – motels, hotels	50-60	60-70	70-80	80+
Schools, libraries, churches, hospitals, nursing homes	50-60	60-70	70-80	80+
Actively used open spaces – playgrounds, neighborhood parks	50-67	-	67-73	73+
Golf courses, riding stables, water recreation, cemeteries	50-70	-	70-80	80+
Office buildings, business commercial and professional	50-67	67-75	75+	-
Industrial, manufacturing, utilities, agriculture	50-70	70-75	75+	-

Noise Range I - Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Noise Range II - Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Noise Range III - Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Noise Range IV - Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: Monterey County 1982

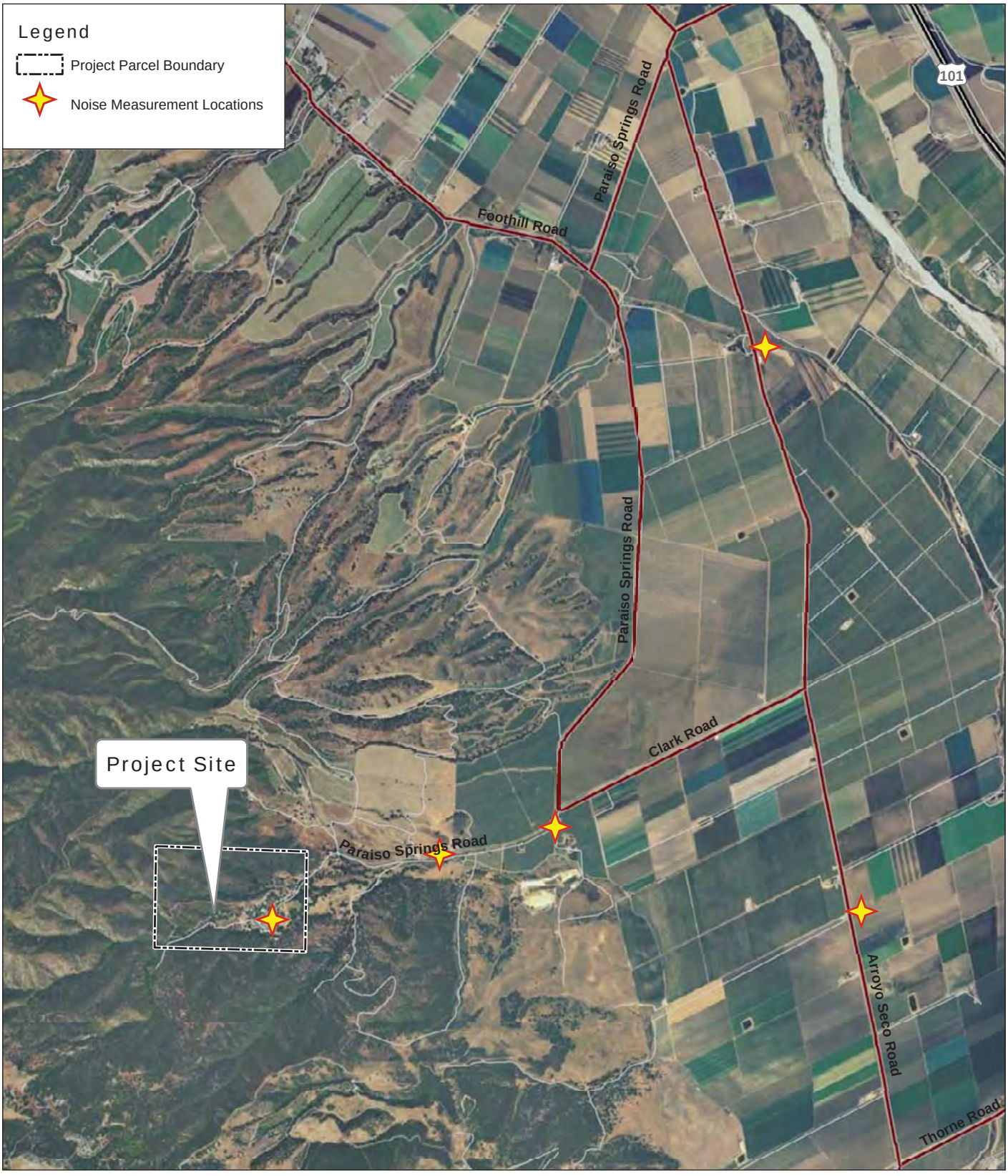
Monterey County Noise Control Ordinance

In addition to the noise standards and policies identified in the *Monterey County General Plan*, Monterey County has also adopted a noise control ordinance (Monterey County Code, Title 10, Chapter 10.60.). The noise ordinance applies to existing stationary noise sources, which are defined in the ordinance as "any machine, mechanism, device, or contrivance." Stationary noise sources are limited to a maximum noise level of 85 dBA at 50 feet. This standard does not apply to aircraft or stationary sources located in excess of 2,500 feet from any occupied dwelling unit.

3.10.4 Analytical Methodology and Significance Threshold Criteria

Methodology

Available information pertaining to noise within the project vicinity was reviewed for the noise analysis, including, but not limited to, the *Monterey County General Plan* (Monterey County 1982) and the *Central Salinas Valley Area Plan* (Monterey County



0 1.25 miles

Source: RBF Consulting 2010

Figure 3.10-2

Noise Measurement Locations

Paraiso Springs Resort EIR

E M C

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1987). Project-related noise components that were identified include both short-term construction noise and long-term operational impacts from increased traffic to the project site. Sensitive receptors (e.g. residential homes) along Paraiso Springs Road in the vicinity of the project site were identified.

Significance Threshold Criteria

In accordance with CEQA, the State CEQA Guidelines (including Appendix G) and agency and professional standards, a project impact would be considered significant if the Project would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels; and/or
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

CEQA does not define what noise or vibration level increase would be considered significant. Typically, in high noise environments a project is considered to have a significant impact if the project would increase the L_{dn} by more than 3 dB (the minimum increase generally perceptible to most people), cause ambient noise levels to exceed the guidelines outlined in the General Plan, or would expose people to vibration levels exceeding the Federal Transit Administration guidelines. Where existing noise levels are well below the General Plan guidelines, a somewhat higher increase (i.e., 5 dB) may be tolerated before the impact is considered significant.

Short-term construction noise impacts would be considered significant if construction activities were to exceed standards adopted by the County of Monterey. The County Code restricts noise from mechanical equipment to 85 dB at 50 feet from the source if it operates within 2,500 feet of an occupied residence. These numerical thresholds will be used to define “Levels exceeding standards.” For projects within Monterey County, the duration and intensity of construction noise is regulated by time limits on grading and other heavy equipment operations. Compliance with these limits plus meeting the ordinance limit from the County Code presumably will create a less than significant impact.

According to the *Monterey County General Plan*, noise standards for residential uses (low density single family) are considered normally acceptable between 50 and 55 L_{dn} dBA and for transient uses (e.g. hotels and motels) between 50 and 60 L_{dn} dBA.

Long-term transportation noise impacts would be considered significant if the proposed project created a substantial increase in ambient noise levels that exceed the County's noise-control standards for transportation noise sources of 60 dBA CNEL/L_{dn}.

Implementation of the proposed project would be considered significant if the proposed project resulted in a substantial contribution to projected future cumulative noise levels at either existing or proposed noise-sensitive receptors that exceeded applicable County noise criteria for land use compatibility.

Impact Analysis

Short-term Construction Noise

Impact 3.10-1	Construction activities associated with the proposed project will result in elevated noise levels in the vicinity of construction activities. Activities involved in construction will typically generate maximum noise levels ranging from 85 to 90 dB at a distance of 50 feet. Construction activities will be temporary in nature and will likely occur during normal daytime working hours. This would be considered a potentially significant impact. (Less than Significant with Mitigation)

During the construction phases of the proposed project, noise would add to the ambient noise environment in the project vicinity. Noise would be generated during the construction phase by a short-term increase in truck traffic along area roadways. A significant project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from the project site. According to the project applicant, the proposed project would require the following construction equipment: dozers, scrapers, track and tire-mounted excavators; vibratory, sheep foot and steel drum rollers/compactors, backhoes, hoe rams/jack-hammers, graders, paving machines, concrete transit trucks/mixers, concrete pumps, cranes, lifts, pickup trucks, flatbed trucks, forklifts, Truck-mounted drill rigs; chainsaws/chippers, electrical generators, dumpster trucks and water trucks, and pile driving rigs. This noise increase would be of short duration, and would likely occur primarily during the daytime hours.

Typical noise levels for individual pieces of construction equipment are summarized in Table 3.10-3, Typical Construction Equipment Noise Levels, as shown below.

Table 3.10-3 Typical Construction Equipment Noise Levels

Type of Equipment	Maximum Level (dBA at 50 feet)
Scrapers	88
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85
Scrapers	88

Notes: dBA = A-weighted decibel.
Source: Cyril M. Harris, Handbook of Noise Control, 1979.

Individual equipment noise levels typically range from approximately 75 to 91 dBA at 50 feet. Typical operating cycles may involve two minutes of full power, followed by three or four minutes at lower power settings. Depending on the activities performed and equipment usage requirements combined average-hourly noise levels at construction sites typically range from approximately 65 to 89 dBA Leq at 50 feet. Assuming a maximum construction noise level of 89 dBA Leq and an average attenuation rate of 6 dBA per doubling of distance from the source, construction activities located within approximately 1,500 feet of noise-sensitive receptors could reach levels of approximately 60 dBA Leq. Sensitive noise receptors are located in the vicinity of the project site, including several single-family homes located along Paraiso Springs Road. However, they are located greater than 1,500 feet from the project site.

If construction activities were to occur during the more noise-sensitive nighttime hours this may also result in increased levels of annoyance and potential sleep disruption due the ambient noise levels during these hours, which would be considered a potentially significant impact. Implementation of the following mitigation measure would reduce the effects to a less than significant level.

Mitigation Measure

MM 3.10-1 During the course of construction, the project developer/applicant shall adhere to Monterey County's requirements for construction activities with respect to hours of operation, muffling of internal combustion engines, and other factors which affect construction noise generation and its effects on noise sensitive land uses. This would include implementing the following measures:

- Limit noise-generating construction operations to between the least noise-sensitive periods of the day (e.g., 7:00 A.M. to 7:00 P.M.) Monday through Saturday; no construction operations on Sundays or holidays;
- Locate construction equipment and equipment staging areas at the furthest distance possible from nearby noise-sensitive land uses;
- Ensure that construction equipment is properly maintained and equipped with noise reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation, and
- When not in use, motorized construction equipment shall not be left idling.

Implementation of the above mitigation measure would prohibit noise-generating construction activities during the more noise-sensitive daytime hours to noise-sensitive receptors located within the project vicinity. In addition, noise generated by construction activities would be short-term in nature and would not occur during operation of the proposed project. Therefore, the significant construction-related noise impacts would be reduced to a less than significant level.

Expose Sensitive Receptors to Unacceptable Noise Levels from Increased Transporation-Related Noise

Impact 3.10-2	The proposed project would expose existing residents living along Paraiso Springs Road to additional transportation noise. However, resulting noise levels would be within County noise standards for single-family residential uses. Therefore, this is considered a less than significant impact.

The major source of noise with implementation of the proposed project is an increase in traffic to the project site along Paraiso Springs Road. Paraiso Springs Road between the project site and Clark Road will experience an increase in traffic from the existing 85 vehicles per day to approximately 417 vehicles per day under an average 70 percent occupancy. Under 100 percent occupancy, the proposed project would result in a total of 567 vehicles per day. On an average day, Paraiso Springs Road would continue to be a relatively low volume road.

There are several single-family homes located along Paraiso Springs Road that would be affected by an increase in traffic noise along the roadway. Doubling the existing traffic volume can cause a 3 dB increase in the average traffic noise. However, traffic noise levels decrease by 6 dB for each doubling of distance from the point noise source to the receptor and by 3dB to 5dB for each doubling of distance from a line source, like a roadway, depending on the ground cover between the source and the sensitive receptor.

The trips generated by the proposed project are expected to more than double over existing conditions, which would likely increase noise levels by approximately 3dB. However, based on noise measurements taken along Paraiso Springs Road, existing noise levels are between approximately 44.6 and 45.0 L_{eq} dBA. Noise standards for residential uses (low density single family) are considered normally acceptable between 50 and 55 L_{dn}. Even with an increase of 10 L_{eq} dBA, noise levels at the single family residential uses along Paraiso Springs Road in the vicinity of the proposed project would be within Monterey County standards for residential uses. Therefore, the impact associated with the proposed project's increase in traffic noise levels would be considered a less than significant impact.

Long-Term Exposure to Noise

Impact 3.10-3	Operation of the proposed project would result in an increase in noise levels at the project site. However, nearby single-family residential uses are located greater than 1,500 feet from the project site. Adherence to County noise standards for low density residential and transient lodging uses would ensure that potential increase in noise levels at the project site would be less than significant.

Implementation of the proposed project would create new noise sources typical of resort and residential uses. Noise typically associated with residential and hotel uses does not produce noise levels greater than 60 dBA. Noise from residential and hotel/resort uses primarily during the "daytime" hours of 7:00 AM to 10:00 PM. Furthermore residential and transient loading uses are required to comply with the noise standards set forth in the *Monterey County General Plan*. According to the *Monterey County General Plan*, noise standards for residential uses (low density single family) are considered normally acceptable between 50 and 55 L_{dn} dBA and for transient uses (e.g. hotels and motels)

between 50 and 60 L_{dn} dBA. Hotels must also meet structural intra-unit noise transmissions standards in addition to the mandated interior noise standard requirements in the Uniform Building Code (UBC). Therefore, increases in noise levels from future residential and hotel uses within the project site would be considered less than significant.

Exposure of the Proposed Project to Airport and Railroad Noise

The project site is located in the unincorporated portion of southern Monterey County approximately eight miles northeast of the City of Soledad and approximately seven miles east of the City of Greenfield. The closest airport to the project site is located in King City Municipal Airport located approximately 21 miles southeast of the project site. Therefore, the proposed project would not result in an exposure to excessive noise levels from the airport.

The Union Pacific Railroad rail line runs through the City of Soledad, approximately eight miles to the northeast of the project site. Due to the distance of the rail line to the project site, rail noise would not be considered an impact within the project site.

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3.11 PUBLIC SERVICES AND UTILITIES

3.11.1 Introduction

This section provides information regarding existing public services (fire protection, law enforcement, schools, library services, and parks and recreation) and existing utilities (potable water service, recycled water service, wastewater services, storm water, solid waste management, and gas, electric, and telephone services) in the vicinity of the proposed project and to identify the potential for additional demand for services with implementation of the proposed project. Public services information was obtained from the *Monterey County General Plan* and the *Central Salinas Valley Area Plan*, the Monterey County Sheriff's Office, the Monterey County Health Department, the Soledad Unified School District, and the CalRecycle website. Additional information was also provided by the project applicant. The analysis of utilities is based on the following technical reports, peer reviews and correspondence:

Wastewater

- *Paraiso Springs Resort - Estimated Wastewater Production and Proposed Treatment, Irrigation, and Storage* (CH2MHill 2010);
  - Memo to EMC Planning Group, subject: Paraiso Springs Resort – Review of Wastewater (Wallace Group 2012).
  - Memo to EMC Planning Group, subject: Paraiso Springs Resort – Review of Wastewater. Comments to Applicant's response to Comments –Wastewater (Wallace Group 2013).
- Dave Von Rueden, CH2MHill. Email message to applicant, March 2013.

Potable Water Source, Demand and Quality

- *Paraiso Springs Resort - Estimated Potable Water Demand* (CH2MHill 2009)
  - Memo to EMC Planning Group, subject: Paraiso Springs Resort – Review of Water System (Wallace Group 2012).
  - Memo to EMC Planning Group, subject: Paraiso Springs Resort – Review of Water System. Comments to Applicant's Response to Comments – Water (Wallace Group 2013).
- *Field Pilot Test Report Paraiso Hot Springs Potable Water Treatment Plant: Fluoride Treatment and AD74 Absorption* (AdEdge Technologies, 2012*)*
  - Memo to EMC Planning Group, subject: Paraiso Springs Resort – Review of Water System (Wallace Group 2012).
  - Memo to EMC Planning Group, subject: Paraiso Springs Resort – Review of Water System. Comments to Applicant's Response to Comments – Water (Wallace Group 2013).
- *Paraiso Springs Resort Fluoride Water Treatment Regeneration Effluent Analysis.* (Culligan MATRIX Solutions 2012).

Stormwater Drainage

- *Paraiso Springs Road: Existing Hydrologic and Hydrologic Site Conditions* (CH2MHill 2005).
- *Paraiso Springs Resort - Response to Hydrology and Hydraulic Analysis and Erosion Control Measures Review Comments* (CH2MHill 2008).
- *Paraiso Springs Resort – Drainage Analysis and Drainage Plan Comments* (CH2MHill 2012).

These technical reports are included as Appendix G.

3.11.2 Environmental Setting

Public Services

Fire Protection

Fire protection services in Monterey County are currently provided by more than 20 different organizations, including fire protection districts, volunteer fire departments, fire brigades, the California Department of Forestry and Fire Protection (CDFFP), the U.S. Forest Service, the National Parks Service and the U.S. military (see Figure 3.11-1, Regional Fire Protection Facilities) (Monterey County 2008).

The project site is located within the Mission Soledad Rural Fire Protection District (hereinafter "District"); with a station located at 525 Monterey Street in the City of Soledad. Their 97 square mile service area includes a population of more than 34,000 people. The District is a combination paid/volunteer fire department. The staff consists of one chief, one fire captain, two career fire engineers, two career fire fighters, and 15 volunteer fire fighters (Soledad 2013). The full-time firefighters are trained as emergency medical technicians and certified in the use of semi-automatic defibrillators and an advance airway device. The volunteer firefighters are fully trained as "First Responders." All personnel receive specific training on wildland fire control.

Backup fire protection services would be provided by the City of Soledad Fire Department. The City of Soledad Fire Department owns seven pieces of apparatus utilized for response to a variety of calls for service. This includes a 1,000 gallon, six-crew member closed cab engine, an 850 gallon, six-crew member type four engine, a utility truck, and a command center utility truck that serves as a Mobile Incident Command Post. (Soledad 2013). The City of Soledad Fire Department has a goal for emergency response time of five minutes or less for fire emergencies over 90 percent of the time.

Law Enforcement

The Monterey County Sheriff's Office provides law enforcement services to the unincorporated portions of Monterey County. These services include patrol, crime prevention and crime investigation provided out of stations in Monterey, Salinas, and King City. The project site is served by the South County-King City Sheriff's station.

Source: RBF Consulting 2010

Figure 3.11-1
Regional Fire Protection Facilities

Paraiso Springs Resort EIR

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As of March 2013, the Sheriff's Office has approximately 391 full-time equivalent staff positions. This included 280 sworn safety officer positions and 111 non-sworn positions. As of March 2013, the Sheriff's Office had 36 vacant positions (Monterey County Sheriffs Office 2013).

The project site is located in Beat #10 of the County Sheriff's patrol, which covers a large area of the Central Salinas Valley that is sparsely populated. This patrol has a relatively long response times (e.g. greater than 10 minutes).

The Soledad Police Department is located at 236 Main Street in the City of Soledad. This station is the nearest police/law enforcement station to the project site and provides general law enforcement duties including the enforcement of federal, state and local laws. In case of an emergency, the Soledad Police Department could provide police support services as part of a mutual aid agreement with Monterey County. The Soledad Police Department has 14 sworn positions and five non-sworn positions, which include one chief, two sergeants, 11 full-time officers, one full-time animal control officer and support staff (Soledad Police Department 2013).

Schools

The Soledad Unified School District is the school district serving the project site. The school district serves approximately 4,444 students in grades K-12 (see Table 3.11-1, Soledad Unified School District Enrollment).

Table 3.11-1 Soledad Unified School District Enrollment

School	Grades	Current Enrollment
Frank Ledesma Elementary School	K-6	631
Gabilan Elementary School	K-6	388
Jack Franscioni Elementary School	K-6	529
Rose Ferrero Elementary School	K-6	500
San Vicente Elementary School	K--6	502
Main Street Middle School	7-8	688
Soledad High School	9-12	1,206
Total		**4,444**
Source: Education.com (2013)		

There are five elementary schools, one middle school, one comprehensive high school and one community education center which provides a variety of alternative programs. These programs include adult education, regional occupational program, independent study, and a continuation high school. The school district also provides alternative and adult education through Pinnacles Continuation High School, Chalone Alternative School, Soledad Adult School, and Mission Trails Regional Occupation Program.

Library Services

The County of Monterey provides library services to residents of the unincorporated county and eight cities through the Monterey County Free Libraries system. Branch libraries are located in 17 communities throughout the County. Monterey County Free Libraries operates seventeen branch libraries, two bookmobiles (one based in Prunedale and the other based in King City), a books by mail program, deposit collections in local schools, and a number of special programs, including a literacy program which operates a literacy outreach vehicle focused on family literacy and kindergarten readiness. Free library services are provided to all residents of Monterey County (co.monterey.ca.us/library/about.html accessed 2/21/13). The closest branch library is located in the city of Soledad.

Parks and Recreation

The Monterey County Parks system consists of nine large regional parks encompassing over 12,155 acres of land and 10,000 acres of lakes. Royal Oaks Park and Manzanita Park serve the residents of North County. Jacks Peak and Toro Park are located adjacent to Monterey-Salinas Highway 68 and serve residents from the Monterey Peninsula and the Greater Salinas Area. San Lorenzo Park, just north of King City, serves residents of the Salinas Valley and visitors to the County. The Lakes San Antonio/Nacimiento Recreation Area and the Laguna Seca Recreation Area/Raceway serve visitors and County residents (Monterey County Parks 2007).

The State of California Parks Department owns and operates 20 park units in Monterey County, totaling 17,567 acres. Most of these units, however, are on or near the coast and not in the vicinity of the site. Pinnacles National Park is located approximately 13 miles northeast of the project site.

Utilities

Potable Water Service

A number of wells and hot springs located on the project site provide potable water to the existing improvements. The main well is 100 feet deep and currently in use for domestic water pumping at a rate of 20 to 30 gallons per minute (design capacity of 29.3 gallons per minute). The second well is 760 feet deep and pumps at a rate of 200 to 300 gallons per minute (with a design capacity of 167 gallons per minute) but is not used for domestic water. The Soda Springs well is currently being used for hot water for the existing spa and pool. This well is 37 feet deep and produces 30-40 gallons per minute at +/- 115 degrees F (CH2MHill 2010c).

As cited in the CH2Hill potable water study (CH2MHill 2010c), during LandSet Engineers' site investigation in late August 2004, groundwater was encountered at 10 of the 15 borings at depths of approximately 11 to 55 feet below the existing ground surface in the Paraiso Springs Valley. Specifically, groundwater in the area of the current hot springs was found to be 11 to 55 feet below the ground surface. To the west of this current hot springs, but still within the valley bottom, the depth to groundwater increased from 18.5 (at Boring [B]-11) to 55 feet (at B-19). A list of all borings that LandSet Engineers drilled and the groundwater depths and temperatures recorded at them are presented in Table 3.11-1, Groundwater Depth and Temperature.

Table 3.11-2 Groundwater Depth and Temperature

Boring Number	Depth to Groundwater (initially)	Depth to Groundwater (after 30 minutes)	Temperature °F
B-1	18.5’	6.5’	73.4
B-3	15.0’	19.0’	73.0
B-5	21.0’	11.5’	79.0
B-7	11.0’	8.0’	-
B-9	12.0’	7.0’	80.9
B-11	18.5’	18.2’	84.1
B-13	12.0’	9.7’	95.0
B-17	31.5’	41.3’	95.7
B-19	55.0’	58.3’	95.0
B-23	14.0’	5.5’	73.0

Source: Geologic and Soil Engineering Feasibility Report, LandSet Engineers, Inc., 2004.

Note: Local groundwater levels can fluctuate over time depending on but not limited to factors such as seasonal rainfall, site elevation, groundwater withdrawal, and construction activities at neighboring sites.

The borings outside of the Paraiso Springs Valley are not included in Table 3.11-1 because groundwater was not found in these borings. Groundwater was not encountered in any geologic unit other than Holocene Alluvium, Qal 2 (see Figure 3.6-2, Site Geology, presented in Section 3.6 of this EIR).

Recycled Water Service

Water is not currently being recycled at the project site.

Wastewater Services

Only a caretaker currently resides on the project site, and the property owners are only occasional visitors. Therefore, wastewater generation on site is currently minimal. Wastewater on the site is currently handled by a septic tank with a leach field that serves the existing buildings (Landset Engineers 2004).

Storm Water

The project site is located at an elevation of approximately 1,200 feet above mean sea level overlooking the Salinas Valley. A 50-foot wide defined drainage channel traverses the middle of the project site from west to east that has capacity of approximately 4,000 cubic feet per second (cfs). There are also several smaller, steeper drainage swales that enter the project site from the north. For a detailed discussion of surface drainage across the project site, see Section 3.8, Hydrology and Water Quality.

Solid Waste Management

The Salinas Valley Solid Waste Authority (SVSWA) serves the eastern inland areas portions of Monterey County. SVSWA’s service area includes the cities of Gonzales,

Greenfield, King City, Salinas, and Soledad, and the unincorporated communities of Bradley, Chualar, Jolon, Lockwood, Pine Canyon (King City), Prunedale, San Ardo, San Lucas, and Spreckels.

Solid waste is disposed of at the solid waste disposal sites at Johnson Canyon and Jolon Road. The Johnson Canyon Sanitary Landfill facility is owned by the SVSWA and encompasses about 122 acres. The Johnson Canyon Sanitary Landfill facility has a permitted capacity of 6,923,297 cubic yards (yd) and the estimated closing date is 2040 (CalRecycle 2013). Collection and disposal services to this facility are provided by the Tri-Cities Disposal and Recycling.

Gas, Electric, and Telephone Service

Electrical power and natural gas service in Monterey County is provided by the Pacific Gas and Electric Company (PG&E). PG&E is an investor owned utility company regulated by the Public Utilities Commission. Six electrical substations are located in Chualar, Gonzales, Soledad, King City, and on Camphora Road and Los Coches Road.

Telephone services are provided throughout the County by AT&T. The telephone lines in the project vicinity are generally above ground.

3.11.3 Regulatory Background

State

School Facilities Act of 1998

The School Facilities Act of 1998, also known as SB 50, provides state funding for new school construction projects that can satisfy specific criteria, including eligibility due to growth, Division of State Architect plan approval and California Department of Education site approval. However, the Act also dramatically limits the maximum amount of impact fees that can be charged by school districts as mitigation for new residential, commercial and industrial construction. Further, if the maximum amount is insufficient to meet their established polices, cities and counties are prohibited from imposing additional conditions to bring the development application into conformity with the established policies. The Act also prohibits local agencies from denying a development application on the basis of a person's refusal to provide school facilities mitigation that exceeds the fee amount and refusing to approve any legislative or adjudicative act on the basis that school facilities are inadequate.

Quimby Act

Since the passage of the 1975 Quimby Act (California Government Code §66477) cities and counties have been authorized to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. The goal of the Quimby Act was to require developers to help mitigate the impacts of property improvements. Originally, the Act was designed to ensure "adequate" open space acreage in jurisdictions adopting Quimby Act standards, which ranged from three to five acres per 1,000 residents.

The 1982 amendment to Quimby was designed to hold local governments accountable for imposing park development fees. AB 1600 requires agencies to clearly show a reasonable relationship between the public need for the recreation facility or parkland and the type of development project upon which the fee is imposed. Cities and counties were required to be more accountable and to show again, a strong direct relationship or nexus between the park fee exactions and the proposed project. Local ordinances must now include definite standards for determining the proportion of the subdivision to be dedicated and the amount of the fee to be paid.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties were required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995 and 50 percent by January 1, 2000.

The Act further requires every city and county to prepare two documents to demonstrate how the mandated rates of diversion would be achieved. The first document is the Source Reduction and Recycling (SRR) Element describing the chief source of the jurisdiction's waste, the existing diversion programs, and the current rates of waste diversion and new or expanded diversion programs intended to implement the Act's mandate. The second document is the Household Hazardous Waste (HHW) Element, which describes what each jurisdiction must do to ensure that household hazardous wastes are not mixed with regular non-hazardous solid waste and deposited at a landfill.

Title 22 California Code of Regulations

The California Department of Public Health (CDPH) promulgates and enforces state regulations for drinking water treatment facilities and distribution systems. These state regulations are at least as strict as federal drinking water regulations, although not all federal regulations are currently incorporated into corresponding state regulations. These state drinking water regulations are codified in California Code of Regulations (CCR) Title 22. The CDPH also regulates the distribution and use of recycled water through CCR Title 22.

California Health & Safety Code § 116525 et seq.

Under the California Health and Safety Code Section 116525 et seq., no person shall operate a public water system unless they first submit an application to the California Department of Public Health and receives a Water Systems Permit, which is required for the operation of a public water system. A change in ownership of a public water system shall require the submission of a new application.

Under the California Health and Safety Code Section 116330, the California Department of Public Health may delegate primary responsibility for the administration and enforcement of Chapter 4 of the California Safe Drinking Water Act within a county to the local health officer for public water systems (does not include community water systems serving 200 or more service connections) by means of a local primacy delegation agreement. The health officer for Monterey County has applied for and entered into a local primacy delegation agreement.

Title 24 California Code of Regulations

The proposed project would be subject Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Title 24 specifies the standards that new construction must meet to achieve the minimum energy efficiency standards of the state. Title 24 regulates energy consumed for heating, cooling, ventilation, water heating and lighting. Adherence to the standards is verified and enforced through the local building permit process.

Monterey County General Plan

The following are a list of Monterey County General Plan goals and policies that are relevant to the proposal.

Water Resources

Goal 5 To conserve and enhance the water supplies in the County and adequately plan for the development and protection of these resources and their related resources for future generations.

Policy 5.1.1 Vegetation and soil shall be managed to protect critical watershed areas.

Policy 5.1.2 Land use and development shall be accomplished in a manner to minimize runoff and maintain groundwater recharge in vital water resource areas.

Goal 6 To promote adequate, replenishable water supplies of suitable quality to meet the County's various needs.

Policy 6.1.1 Increased uses of groundwater shall be carefully managed, especially in areas known to have groundwater overdrafting.

Policy 6.1.2 Water conservation measures for all types of land uses shall be encouraged.

Fire Hazards

Goal 17 Minimize the risks from fire.

Policy 17.3.1 In no case shall a roadway be less than 12 feet wide. Determination of the width of an all weather surface shall be made at the time of subdivision approval. Further, the County shall revise its subdivision ordinance to address road standards, including minimum width, height clearance, gradient and materials; these standards shall pertain to all new development. Minimum road widths of all new driveways, roads, and streets shall be designed, constructed and maintained according to adopted County standards.

Policy 17.3.3 The County shall require all new development to be located within the response time of 15 minutes from the fire station responsible for serving this parcel. If this is not possible, on-site fire protection systems (such as fire breaks, fire retardant building materials, and/or water storage tanks)

approved by the fire jurisdiction must be installed or development may only take place at the lowest density allowed for the parcel by the General Plan.

Policy 17.3.4 The County shall require all new development to have adequate water available for fire suppression. Water availability can be provided from a conventional water system; from an approved alternative water system if within 300 feet of a habitable structure; by the fire fighting equipment of the fire district within which the property is located; or by an individual water storage facility – water tank, swimming pool, etc – on the property itself. The fire and planning departments shall determine the adequacy and location of individual water storage to be provided.

Fire and Law Enforcement Services

Goal 46 To encourage financial support mechanisms and organizational structures which would maintain emergency services at levels adequate for the protection of life and property.

Policy 46.3 Consider adequate levels of police protection and crime investigations for the protection of life and property in reviewing new development proposals.

Educational Facilities

Goal 47 To promote a broad range of educational opportunities within existing and future population centers.

Policy 47.1.1 The County Planning Department with the cooperation of other appropriate agencies shall provide, at the earliest possible occasion, its best estimate of increased enrollment generated by new housing development to the affected school district.

Policy 47.2.1 The County shall impose a housing impact fee on all new residential development in districts which demonstrate overcrowded classroom conditions for the purpose of funding interim school facilities.

Library Services

Goal 50 To increase educational, informational, and leisure opportunities in the county by providing adequate library services.

Policy 5 0.3.1 The County shall impose a housing impact fee on all new residential development in districts which demonstrate overcrowded classroom conditions for the purpose of funding interim school facilities.

Park and Recreational Facilities

Goal 51 To provide recreational opportunities, preserve natural scenic resources and significant wildlife habitats, and significant historic resources by establishing a comprehensive county regional parks and recreation system.

Policy 51.2.2 County parks should be developed and distributed equitably, where feasible in terms of population, geographic location, and recreational needs.

Central Salinas Valley Area Plan

The *Central Salinas Valley Area Plan* (Monterey County 1987*)* contains the following policies applicable to the proposed project:

Policy 51.1.6 (CSV) Recreational trail easements should be located within County-required easements of private roads.

Policy 51.1.7(CSV) A land owner shall not be held responsible for either trail maintenance or public liability when a public-recreational trail easement is appurtenant to private land. Public-recreational trail easements shall not be required to be opened to public use until either a public agency or private association agrees to accept liability and responsibility for maintenance of the trail easement. The County shall implement necessary measures for services that cannot be adequately provided by private organizations. The implementation of such measures shall be funded by user fees and tax revenues.

Monterey County Ordinances (Water Wells)

Title 15 of the Monterey County Code regulates the construction, repair, and reconstruction of all wells to prevent groundwater contamination and ensure that water obtained from wells will be suitable for its intended purpose and will not jeopardize the health, safety, or welfare of the people of the County. It also regulates the destruction of wells found to be public nuisances, or when otherwise appropriate, to ensure that the wells will not cause pollution or contaminate groundwater.

Wells are regulated by the Monterey County Health Department, Environmental Health Bureau. A permit must be obtained from the Environmental Health Bureau prior to construction, repair, reconstruction or destruction of any well, abandoned well, cathodic protection well, observation well, monitoring well, or test well. The applicants must meet the standards for these procedures set forth in the State Department of Water Resources Bulletin 74-81 and 74-90. The ordinance also modifies the state standards in several areas, including: a) the minimum allowable distance between wells and sewage leaching fields, septic tanks and seepage pits; b) requirements for sealing of the annular space surrounding the conductor casing of all wells; c) restrictions on the discharge of drilling fluids, and d) prevention of erosion caused by test pumping of wells. Well permits are subject to inspection.

All wells must be constructed and cased to prevent pollution, and all openings to the well must be sealed off to prevent pollution. A well is considered abandoned when it has not been used for a period of one year, unless the owner can meet various criteria demonstrating an intention to use the well again. Abandoned wells are destroyed by methods described in Bulletin 74-81 and 74-90, with modifications as specified in the code to prevent the migration of water from one aquifer to another.

Water Treatment Required

Section 15.04.146 (d) Monterey County Ordinances requires a treatment facility to be installed under the direct supervision of an experienced professional civil engineer at the source point or entry point prior to storage and be equipped with a waste disposal system that will properly contain and dispose generated waste in a manner approved by the director.

Monterey County Health Department, Environmental Health Bureau

The mission of the Environmental Health Bureau is to prevent environmental hazards from occurring and to protect the public and resources from environmental hazards when they occur. They are the agency responsible for water well permits for construction, destruction and modification as well as inspect placement of a sanitary seal. They also conduct inspections, issue permits and monitor chemical and bacteriological water quality for small public water systems with less than 200 connections.

3.11.4 Analytical Methodology and Significance Threshold Criteria

Methodology

Public Services

Available information pertaining to public services was reviewed during this analysis including, but not limited to the *Monterey County General Plan* (Monterey County 1982) and the *Central Salinas Area Plan* (Monterey County 1986). The Monterey County Sheriff's Office and the Mission Soledad Rural Fire Protection District were contacted to gather information on existing fire and police facilities, staffing for the planning area, and response times. In addition, Soledad Unified School District was contacted to obtain information on the educational facilities.

Utilities

The water supply and wastewater analyses were prepared using information derived from the site specific technical reports and subsequent peer reviews prepared for the project addressing water supply, water supply treatment, and wastewater generation for the proposed project. These technical reports and peer reviews are included in this EIR as Appendix I.

Significance Threshold Criteria

As stated in Appendix G of the CEQA Guidelines and standards used by the County of Monterey, a project may create a significant impact related to public services if it would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other objectives for:

    - Law Enforcement or Fire Protection
    - School Facilities; or
    - Parks.

2. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

3. Result in the construction of new or expansion of existing water or wastewater treatment facilities;

4. Result in the construction of new or expansion of existing storm water drainage facilities;

5. Result in a determination that there is insufficient water supplies to available to serve the project through existing entitlements and resources;

6. Exceed wastewater treatment capacity; or,

7. Exceed landfill capacity or prohibit compliance with federal, state or local statutes and regulations for solid waste disposal.

Physical Impacts on Fire Protection and Law Enforcement Services

The proposed project would result in an increase in transient population within the project site, which would result in an increase in demand for fire protection and law enforcement services. However, the increase in transient population would not be considered substantial enough to warrant construction of new or expanded facilities in order to maintain service ratios, response times, or other objectives for the Mission Soledad Rural Fire Protection District and the County of Monterey Sheriff's Department to serve the proposed project. Therefore, the proposed project would result in no environmental impacts associated with fire protection and law enforcement services.

Fire Protection System

The proposed project would include a fire protection system (CHM2Hill 2005b), which would consist of hydrant network, pipeline and sprinkler system, and a water reservoir see Figure 2-13, Fire Protection Plan, presented earlier. The hydrant network would be supplied by dedicated firewater pipeline, separate from the project's potable water system. A total of 16 hydrants would be provided in on-site locations. The flow capacity for each hydrant would be 1,000 gallons per minute.

In addition, all buildings on the project site would include a sprinkling system designed by a licensed fire protection engineer. A commercial sprinkler system supplied by the fire water pipeline system would be provided for the Hotel/Spa Resort Complex, the Hamlet, and the condominiums. The commercial sprinkler system would be supported by a 500,000 gallon water reservoir located on the site[12]. The condominiums and single-family homes sprinklers would be connected to the potable water system, on the homeowners' side of the water meters.

[12] The precise storage volume and type of storage will be established through a detailed engineering study performed during the design development phase of the Project.

Other fire protection measures implemented on the project site would include 12-foot wide access roads by the Spa, Fitness Center, and condominiums, adequate turn-arounds, and access road bridge designed for highway loading standards.

The Mission Soledad Rural Fire Protection District, and/or the Soledad Fire Department, would not be required to construct a new facility or expand an existing facility in order to adequately serve the proposed project.

Law Enforcement

The project site is located in Beat #1 of the County Sheriffs patrol, which covers a large area and has relatively long response times. An increased number of visitors may result in an increase of crime within the project site and the project vicinity. However, the proposed project would have on-site security, with the Sheriff's department acting as a second responder. In addition, all visitors would pass through a security gate at the main entrance, which would significantly reduce crime within the project site.

The proposed project would result in an increase in transient population within the project site, which would result in an increase in demand for fire, law enforcement, and emergency medical response services. However, the increase in transient population would not be considered substantial enough to warrant construction of new or expanded facilities in order to maintain service ratios, response times, or other objectives for the Mission Soledad Rural Fire Protection District and the Monterey County Sheriff's Department to serve the proposed project (Monarque, Chuck, Monterey County Sheriff's Department, email correspondence, 2013).

Physical Impacts on Schools, Libraries and Parks

The proposed project would result in an increase in the transient population within the project site. However the proposed project would not require the expansion of existing or construction of new schools, libraries, or park facilities. Therefore, the proposed project would result in no environmental impact to schools, libraries, and parks.

Schools and Libraries

The proposed project is located within the boundaries of the Soledad Unified School District. Although the proposed project includes hotel and residential timeshare units, people using these units would be transient and would not require school and/or library services. Therefore, the proposed project would result in no environmental impacts associated with schools and libraries.

Parks

The proposed project includes open space and recreational facilities including but not limited to an amphitheatre lawn, hiking trails and center, and putting greens.

The proposed project is located in unincorporated portion of Monterey County approximately eight miles from the City of Soledad. Therefore, it is not likely that visitors to the proposed project would utilize any public parks in the general vicinity. Therefore, the proposed project would have no environmental impact on public parks in the general vicinity.

Wastewater Generation and Treatment

Impact 3.11-1:	Implementation of the proposed project would result in increased wastewater flows and includes construction of new wastewater treatment, distribution, and disposal facilities. The construction and operation of these facilities would result in a less than significant environmental impact.

Wastewater Generation

The project site is currently served by an existing septic tank and leach field system within the project site to dispose of wastewater. Implementation of the proposed project would increase wastewater flows over existing conditions. The total projected wastewater flow generated by the proposed project is approximately 38,142 gallons per day (CH2MHill 2013a). This is utilizing a conservative scenario of 100 percent occupancy of the hotel and all other facilities at full project buildout.

Wastewater Treatment

The existing wastewater system is not sufficient to treat wastewater from the proposed project. Therefore, the proposed project includes construction of a new wastewater collection and treatment and reclaimed system that would be constructed near the project entrance, downhill from the main resort area. The description of the wastewater treatment process is contained in the report prepared for the project, *Paraiso Springs Resort-Estimated Wastewater Production and Proposed Treatment, Irrigation, and Storage* (CH2MHill 2010b), and Memo to EMC Planning Group, subject: Paraiso Springs Resort – Review of Wastewater (Wallace Group 2012a).

To address the needs of the resort and meet all regulatory requirements, it was determined that wastewater would be treated to a tertiary filtered and disinfected level, as defined by Title 22 of the Code of California Regulations[13]. This would allow the water to be recycled for landscape and crop irrigation throughout the resort.

The wastewater treatment facility would consist of a membrane bioreactor (MBR) combined with ultraviolet light (UV) disinfection wastewater treatment plant, which would include fine screening at the head of the treatment plant. The screening would be comprised of both organic and inorganic material that would be macerated and washed,

[13] Disinfected tertiary recycled water is defined by Title 22 of the Code of California Regulations §60301.230 as follows: "Disinfected tertiary recycled water" means a filtered and subsequently disinfected wastewater that meets the following criteria: (a) The filtered wastewater has been disinfected by either: (1) A chlorine disinfection process following filtration that provides a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or (2) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration. (b) The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

which would return most of the organic matter to the waste stream. The residual waste would be compacted and disposed of at the landfill. Waste would then flow through the screens to the biological treatment tank. Excess biomass would be hauled to a municipal septage receiving facility.

Water would exit the biological process through membranes submerged in the biological treatment tank, thereby accomplishing separation of solids and liquids. The membranes would be backwashed periodically with air and cleaned less frequently with chemical cleaning agents. The filtered water would then be disinfected in an ultraviolet (UV) system. The process would produce a level of tertiary filtered and disinfected water, as defined by Title 22 of the Code of California Regulations. The MBR system is designed to nitrify and denitrify, producing nitrate-nitrogen of less than 6 mg/L which meets County Standards as outlined in Monterey County Code Section 15.23.040 (c) (CH2MHill 2013a). Recycled water would then be used for irrigation within the project site.

The treatment facility will include two MBR units. These treatment units together will have the capacity to handle 40,000 gpd at average conditions or 80,000 gpd at peak conditions (CH2MHill 2013a).

Irrigation and Storage

The balance between irrigation and storage is sensitive to the resort occupancy rate, which determines the volume of wastewater production. For the evaluation of irrigation and storage, an occupancy rate of 85 percent for the hotel and 100 percent occupancy for other facilities at full project buildout was assumed for each phase of development (Phases 1 through 4). Phase 4 represents full buildout and includes all prior phases. Wastewater treatment capacity, supplemental irrigation, and seasonal storage requirements were also sized for maximum occupancy.

Recycled Water Balance

A water balance analysis was conducted for the projected recycled wastewater flows and landscape irrigation requirements of the proposed project. The water balance is based on estimates of the total area that could be irrigated, the volume of storage that would be needed given expected monthly wastewater flows, and supplemental freshwater requirements. Projected full-occupancy recycled water flows were determined for the four project phases, ranging from 18,312 gallons per day in Phase 1, to 36,495 gallons per day in Phase 4 at buildout.

The irrigation area of the proposed project is projected to be much smaller than the total development envelope. Landscaping for the proposed project is a complex mixture of wine grapes, grass, and trees and shrubs, with a total area of 23.8 acres. Based on the irrigation demands of the proposed project, approximately 1.7 million gallons of seasonal water storage (generally during November through February) would be needed for recycled water that exceeds the amount that can be used for irrigation.

Needed wet-weather storage capacity, based on a 120-day storage requirement for wastewater flows, totals 2.2 million gallons for Phase 1, and 4.38 million gallons by Phase 4.

From April through October, supplemental water use would be needed to meet the irrigation demand. Untreated well water will be pumped to the recycled water storage tank and introduced via an air gap system to supplement water. The peak month for supplemental water use is expected to be July, with approximately 2.57 million gallons to meet demand in Phase 1, and 2.01 million gallons in Phase 4. This is a difference of 0.8 million gallons at buildout.

Recycled Water Storage

The seasonal storage facility is planned to be an underground reinforced concrete reservoir. According to the data shown here, the maximum size of the underground recycled water reservoir would be 4.38 million gallons to meet County the requirement of 120 days of storage. During dry years at buildout, water would be stored during all months except June, July, and August; during typical years, all months except July and August; and during wet years, during all months. The actual duration of storage will vary greatly depending upon weather. Because the storage tanks are covered and do not receive surface runoff, no additional treatment during storage is anticipated.

The reservoir size for that amount of storage would be approximately 28,750 square feet (250 feet by 115 feet by 20.4 feet deep) constructed beneath the parking lot near the wastewater treatment facility. A smaller reservoir would be constructed in Phase 1, but would be expanded with future development phases. Future expansions would be sized according to actual water use data. The actual size and configuration of the underground reservoir will be determined during final design, considering final design level geotechnical engineering and landscape architectural data.

Conclusion

The proposed project will include construction of a new wastewater treatment and distribution system to accommodate the wastewater generated from the proposed project. The treatment facility will have the capacity to handle 40,000 gallons per day at average conditions, or 80,000 gallons per day at peak conditions, which exceeds the total projected wastewater flow of 38,142 gallons per day.

Treated wastewater will be used for irrigation within the project site. Based on the irrigation demands of the proposed project, seasonal water storage would be required for recycled water that exceeds the amount that can be irrigated, generally during November through February. The excess recycled water would be stored in a 4.38 million gallon reservoir which is adequate to meet County requirement of 120 days of storage.

The proposed project includes construction of new a wastewater treatment, distribution, and storage facility that will adequately process projected wastewater flows, construction and operation of the facility. Therefore, the proposed project would have a less than significant impact on wastewater services and/or facilities.

Increased Demand for Potable Water and Water Quality Issues

Impact 3.11-2	The proposed project would have sufficient water supplies available to serve the proposed project from existing resources, and new or expanded entitlements are not needed. However, the water supply for the proposed project currently exceeds the public health standard of 2.0 mg/L for fluoride. This would be considered a potentially significant impact (Less than Significant with Mitigation).

Water Demand and Availability

(Refer also to discussion under Impact 3.8-4: Long Term Water Supply in the Hydrology and Water Quality section of this EIR). Implementation of the proposed project would increase the peak day potable water demand for the proposed project. Assuming year-round full occupancy, the proposed project is conservatively projected to use approximately 42,380 gallons of potable water per day (CH2MHill 2010c, page 8) which equates to about 47.5 acre-feet of water per year at build out. This water will be reclaimed producing 36,495 gallons per day of reclaimed water which will be used for irrigation. An additional 14,280 gallons per day (16 acre-feet per year) would be needed to supplement the irrigation needs. Therefore, total projected water use at build out would be 63.5 acre-feet per year (47.5 acre-feet per year potable plus 16 acre-feet per year for irrigation). This water demand does not include water for the proposed pools and spas as water for these facilities will be supplied from the existing hot springs rather than the potable water supply.

An on-site pump test was conducted at the potable supply well, Well No.1 or Main Well and Well No. 2 from November 26 through December 6, 2007. The test resulted in a sustained yield of approximately 58.5 gallons per minute for Well No. 1 and 334.8 gallons per minute for Well No. 2.

According to the Monterey County Source Capacity Procedures, a ten-day pumping test for wells produced from non-alluvial formation for water systems will allow a source capacity credit of approximately 50 percent. This means that Well No.1 or the Main Well is allowed a capacity credit of approximately 29.3 gallons per minute and Well No. 2 is allowed a capacity credit of approximately 167 gallons per minute. Together these two wells can provide 196.3 gallons per minute, to meet the 29.4-gallon per minute peak potable water demand and also the supplemental irrigation water demand at buildout.

Water Treatment

Based on the most recent water quality tests conducted in September 2009, water from Well No.1 or Main Well and Well No. 2 cannot be used for potable purposes directly because fluoride levels exceed the public health standard of 2.0 mg/L. Three options for fluoride removal include ion exchange, reverse osmosis, and activated alumina. The treatment process recommended for the proposed project is activated alumina because of the low initial cost and low volume of waste generated (CH2MHill 2010c, page 8.)

The treatment process would involve passing water through a tank containing activated aluminum supported by a bed of gravel. The activated aluminum would require regeneration weekly using an acid solution. The waste regeneration solution would then be neutralized using caustic soda. This would require storage of an acid solution and

caustic soda for regeneration and cleaning of the material on-site. Please refer to Section 3.7 Hazards and Hazardous materials for a discussion of potential hazards associated with storage of these materials on site.

This activated alumina process would result in an approximate five percent loss of water volume as neutralized waste, would reduce the available capacity of the wells to approximately 186 gallons per minute. However the two wells can still provide for an adequate supply of potable water for the proposed project.

A field pilot test, *Field Pilot Test Report for the Paraiso Hot Springs Potable Water Treatment Plant – Fluoride Reduction AD74 Adsorption* (AdEdge Technologies 2012), was conducted demonstrating the proposed fluoride treatment process utilizing activated alumina filtration. The intent of the pilot test was to utilize information gathered as not only proof of concept but also for implementing a full-scale water treatment system at the site.

The results of the AdEdge pilot test concluded that the adsorption process of the activated alumina filtration process achieved the primary objective of reducing fluoride to a less than State of California primary drinking water maximum contaminant levels of 2.0 mg/L for fluoride. The pilot report also provided specific recommendations and parameters for full-scale activated alumina operations (AdEdge Technologies 2012, pages 8-9).

The project applicant would be required to design and install water system improvements to meet the standards found in Chapter 15.04 and 15.08 of the Monterey County Code and Titles 17 and 22 of the California Code of Regulations. As the wells do not currently meet the fluoride standards of 1.0 mg/L, well water would be treated with an activated alumina filtration process as identified in the *Paraiso Springs Resort-Estimated Potable Water Demand (*CH2MHill 2010c) and corresponding *Field Pilot test report for the Paraiso Hot Springs Potable Water Treatment Plant – Fluoride Reduction AD74 Adsorption* (AdEdge 2012). In addition, as identified in the *Paraiso Springs Resort-Estimated Potable Water Demand (*CH2MHill 2010c), both wells should be rehabilitated during construction of the proposed project in order to increase longevity and efficiency.

Water Treatment Waste Handling

The neutralized waste from the proposed activated alumina filtration process would contain fluoride and aluminum and would require special disposal or treatment. One option would be to haul the waste off site to an approved disposal site. This would require between one tanker truck per day and one every 3.5 days taking effluent to the Monterey Regional Water Pollution Control Agency wastewater treatment plant east of the City of Marina, approximately 35 miles northwest of the project site (Culligan MATRIX Solutions 2012). Another option would be to store, dilute with effluent water from the on-site wastewater treatment plant. As identified under Impact 3.10-4, above wastewater would be treated to tertiary standards and used for irrigation of the on-site plant material.

An analysis of the fluoride water treatment regeneration effluent was conducted in 2012 by Culligan MATRIX Solutions. The report concluded that the onsite-treatment option would provide optimal treatment operations and produce effluent fluoride concentrations that are relatively equal to or less than the water from well #2.

The project applicant would be required to design and install wastewater system improvements to adequately treat the neutralized waste from the proposed activated alumina filtration process. In addition, the applicant will be required to have disposal of the fluoride concentrate included in the wastewater discharge permit from the Regional Water Quality Control Board (RWQCB).

The following mitigation measure would be required to ensure the proposed water system improvements meet required standards and to ensure proper handling of the activated alumina waste products:

Mitigation Measure

MM 3.11-2 The project applicant shall contract with a qualified engineer to finalize an activated alumina water treatment plant consistent with recommendations outlined in the AdEdge Technologies Pilot Test Report (2012) identifying water system improvements to meet the standards as found in Chapter 15.04 and 15.08 of the Monterey County Code, and Titles 17 and 22 of the California Code of Regulations. Final water system improvement plans shall identify any necessary rehabilitation of Well No. 1 and Well No. 2 to increase longevity and efficiency, the specific water treatment facilities, and how the water treatment facilities will remove all constituents that exceed California Primary and Secondary maximum contaminant levels (e.g. fluoride, coliform, TDS, iron, etc.) from drinking water.

The project applicant shall contract with a qualified engineer to design and install wastewater system improvements and procedures that will adequately treat the neutralized waste from the proposed activated alumina filtration process. Final wastewater improvement plans shall identify the specific wastewater treatment improvements, operating parameters, wastewater volumes, waste constituents of the proposed full-scale system, and how the wastewater treatment process will produce effluent fluoride concentrations that are equal or less than the concentrations in the existing source water.

Monitoring Actions

Prior to recording the final map or issuance of any construction permits, the applicant shall submit the final water treatment plant design for review and approval by the Monterey County Health Department, Environmental Health Bureau.

Implementation of this mitigation measure would reduce potential impacts associated with safe drinking water to a less than significant level by ensuring that the water system improvements are constructed in accordance with County standards and meet California

Primary and Secondary maximum contaminant levels. Implementation of this mitigation measure would also reduce potential impacts associated with disposal/treatment of the neutralized waste from the proposed activated alumina filtration process water to a less than significant level by ensuring that the wastewater system improvements and procedures are put into place to ensure the process will produce effluent fluoride concentrations that are equal or less than the source water coming from the wells.

Construction of New or Expansion of Existing Storm Water Drainage Facilities

Impact 3.11-3: The proposed project would be required to detain the difference between the 100-year post-development runoff rate and the 10-year pre-development runoff rate. This may require the construction of new or expanded storm water detention facilities. This would be considered a potentially significant impact (Less than Significant with Mitigation).

The Monterey County Water Resources Agency has a standard design policy that requires storm water detention facilities be provided to limit the 100-year post-development runoff rate to the 10-year pre-development rate. The applicant as part of their initial project indicated that the proposed project, storm water in excess of pre-project conditions will be retained on site through the use of low impact design (LID) methods, often referred to as storm water best management practices (BMPs). Techniques will include roof runoff controls, site design and landscape planting, pervious paving, vegetated swales and buffer strips, and bioretention.

Mitigation Measure 3.8-2 (Section 3.8 Hydrology and Water Quality) requires that the project applicant contract with a registered Civil Engineer to prepare a final drainage plan with water detention facilities to limit the 100-year post-development runoff rate to the 10-year pre-development rate in accordance with Section 16.16.040.B.5 of the Monterey County Code and Monterey County Water Resource Agency (MCWRA). Further, Mitigation Measure 3.8-2 requires that this is accomplished through the use of LID features, BMPs and incorporation of relevant storm water recommendations as described in the Geologic and Soil Engineering Feasibility Report (Landset Engineers 2004). In the event that the detention objectives can not be accomplished through LID methodologies, Mitigation Measure 3.8-2 states that a detention basin may be used. The final drainage plan must be submitted for review and approval by the Public Works Department and Monterey County Water Resources Agency prior to the recording the Final Subdivision Map.

Implementation of Mitigation Measure 3.8-2 would require that the final drainage plan, including storm water detention facilities, are designed in accordance with County standards and incorporate LID features and BMPs. The Drainage Plan is required to be submitted for review and approval by the Public Works Department and Monterey County Water Resources Agency prior to the recording the Final Subdivision Map. Therefore, with implementation of Mitigation Measure 3.8-2, impacts associated with the construction of new of expanded storm water facilities will be reduced to a less than significant level.

Increased Generation of Solid Waste

Impact 3.11-4	The proposed project would result in an increase in solid waste generation. Solid waste would be disposed of at the Johnson Canyon Landfill, which has sufficient permitted capacity to accommodate waste generated by the proposed project. Therefore, the impact is less than significant.

Construction of the proposed project would result in the generation of additional solid waste. Solid waste would be disposed of at the Johnson Canyon Landfill located at 31400 Johnson Canyon Road, east of the City of Gonzales. The Johnson Canyon Landfill is operated by the Salinas Valley Solid Waste Authority. The proposed project would generate waste during construction activities and during long-term operations.

The proposed project's solid waste impacts were evaluated using information provided by the U.S. EPA, CalRecyle and the Paraiso Springs General Development Plan.

Construction Waste

U.S. EPA estimated generation rates of non-residential construction debris were used to determine construction-generated waste (i.e., 4.34 pounds [lbs] per square foot [sf] of building size) (EPA 2009 page 10). The projected solid waste generation from the construction of the proposed project is presented in Table 3.11-3, Solid Waste - Construction.

Table 3.11-3 Solid Waste - Construction

Facility Type	Basis of Demand/ Building Footprint (sf)	Demand Generation Factor (lbs/sf)	Total Waste Generated (tons)	Total Waste Diverted (50%) (tons)	Total Waste to Landfill (tons)
Hotel	115,575	4.34	251	125.5	125.5
Hamlet	18,550	4.34	43	22.5	22.5
Spa and Fitness Center	51,090	4.34	111	55.5	55.5
For Sale Time Share Units	124,240	4.34	270	135.0	135.0
Future Phase	5,150	4.34	11	5.5	5.5
				Total	**344.0**

Source: Preliminary Vesting Tentative Map, HG Architects, 7/15/05, revised 5/18/12, EPA 2009

The proposed project is expected to contribute approximately 344 tons or 573 cubic yard (yd3) (assuming a waste density of 1,200 lbs per yd3)[14], of construction waste to the landfill.

[14] According to Zekkos D.P., J.D. Bray, E. Kavazanjian, N. Matasovic, E. Rathje, M.Riemer, and K.H. Stokoe II, Framework for the Estimation of MSW Unit Weight Profile, Proceedings Sardinia 2005, Tenth International Waste Management and Landfill Symposium, October 2005, 1,200 lbs/yd3 is the mean value of fresh waste density.

Long-term Use Waste

Waste generation rates available from the *Monterey County General Plan*, CalRecycle, industry standards, and other historic data on Monterey County and California were used to determine solid waste generation rates for the proposed project. The projected solid waste generation from the construction of the proposed project is presented in Table 3.11-4, Solid Waster - Long-term Operations.

Table 3.11-4 Solid Waste - Long-term Operations

Facility Type	Basis of Demand/ Building Footprint (sf)	Demand Generation Factor (lbs/1,000sf)	Total Waste Generated (tons/year)	Total Waste Diverted (50%) (tons/year)	Total Waste to Landfill (tons/year)
Hotel	115,575	1,998	115	57.5	57.5
Hamlet	18,550	1,998	18	9.0	9.0
Spa and Fitness Center	51,090	1,998	51	25.5	25.5
For Sale Time Share Units	124,240	1,998	124	62.0	62.0
Future Phase	5,150	1,998	5	2.5	2.5
Total					**156.5**

Implementation for the proposed project would generate approximately 156.5 tons or 260 cubic yards of waste per year to the landfill.

Using the EPA Demand Generation Factor disposal rate, the landfill would have adequate capacity to accommodate both the short-term construction-related waste of 344 tons and the long-term operation waste of approximately 156.5 tons per year. Therefore, the proposed project would have a less than significant impact on the landfill.

As mandated by the California Integrated Waste Management Act of 1989, 50 percent of all solid waste must be diverted from landfills. As of 2007, with the passage of SB 1016, the Per Capita Disposal Measurement System, jurisdictional diversion rates were no longer utilized and only per capita disposal rates are measured. The new per capita disposal and goal measurement system moves the emphasis from an estimated diversion measurement number to using an actual disposal measurement number as a factor, along with evaluating program implementation efforts. These two factors help determine each jurisdiction's progress toward achieving its Integrated Waste Management Act (AB 939) diversion goals. The 50 percent diversion requirement is now being measured in terms of per-capita disposal expressed as pounds per person per day.

As of 2011, all of the jurisdictions in Monterey County achieved their per capita Calculated Disposal Rate (pounds/day/person) target, which the exception of Greenfield, which did not provide a report for 2011 (CalRecycle 2013). The Disposal Rate is one factor in determining a jurisdiction’s compliance with the intent of AB 939. In 2011, only 13 jurisdictions statewide did not meet their Calculated Disposal Rate targets (CalRecycle 2013). It is conservatively assumed that under the waste requirements set by

Monterey County, waste generated by the proposed project would not result in the county exceeding its per capita Disposal Rate target. This assumption was used in the waste generation calculations above. Therefore, the proposed project would not effect the County's current compliance with the California Integrated Waste Management Act of 1989. Impacts associated with solid waste are less than significant.

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3.12 TRANSPORTATION AND TRAFFIC

3.12.1 Introduction

This section of the EIR describes and discusses the potential environmental impacts of the proposed project on the roadway system and alternative transportation including (e.g. transit, bicycle, and pedestrian). The analysis described in this section is largely based on a project specific traffic impact analysis prepared for the applicant by Hatch Mott MacDonald in September 2008 (Revised January 21, 2011), a peer review by Hexagon Transportation Consultants, Inc.(dated April 18, 2011) and responses to the peer review prepared by Hatch Mott MacDonald (dated September 27, 2011). The traffic impact analysis analyzes existing traffic conditions, existing plus project conditions; and cumulative conditions. The results of the traffic impact analysis are summarized herein. For detailed supporting analysis, the reader is referred to the traffic impact analysis, which is included as Appendix H.

3.12.2 Environmental Setting

Existing Roadway System

Highways

U.S. Highway 101 is the primary north-south arterial within Monterey County, entering the Central Salinas Valley Planning Area at Chualar and connects all of the South County cities of Gonzales, Soledad, Greenfield and King City. Highway 101 is the County's most prominent trucking corridor and the principal transport route for goods and services into, out of, and through the Central Salinas Valley Planning Area.

County Roads

Paraiso Springs Road. Access to the project site is provided by Pariaso Springs Road, which is a two lane County road with a pavement width that varies from less than 16 feet immediately east of the project site to between 20 and 22 feet in the vicinity of Clark Road. Approximately 85 trips per day are on Paraiso Springs Road, which serves single family residential uses, a small winery, and the project site. Paraiso Springs Road connects with Arroyo Seco Road approximately one mile west of Highway 101.

Arroyo Seco Road. Arroyo Seco Road has an interchange with Highway 101 approximately one mile south of the City of Soledad. This County road provides regional access for the proposed project. Arroyo Seco Road extends in a southeasterly orientation to the west of the City of Greenfield and serves the Arroyo Seco River area south of Paraiso Springs Road.

Fort Romie Road. Fort Romie Road is a County road and extends between Arroyo Seco Road and River Road.

River Road. River Road is a County road and extends from Fort Romie Road northerly along the westerly edge of the Salinas Valley to Highway 68 west of the City of Salinas.

Existing Traffic to the Project Site

Under existing conditions, the project site is gated and traffic to the project site is approximately four trips during the morning peak hour on Paraiso Springs Road west of Clark Road.

Transit

Monterey-Salinas Transit (MST) provides fixed-route bus service in Monterey County and Peninsula cities. MST Line 23 provides service between Salinas and King City via US Highway 101 with stops at various locations along the highway at Chualar, Gonzales, Soledad, and King City. Transit service on Line 23 is provided on weekdays and on Saturday and Sundays.

Pedestrian Facilities and Bicycle Facilities

Pedestrian facilities include sidewalks, crosswalks and pedestrian signals. There is not a significant amount of foot-traffic in the vicinity of the proposed project and therefore sidewalks are not provided along Paraiso Spring Road, Arroyo Seco Road and other roadways in the project vicinity.

The Street and Highways Code (Section 890-894.2) categorizes three types of bicycle facilities:

- Bike path (Class I) - A completely separate right-of-way designed for the exclusive use of cyclists and pedestrians, with minimal crossings for motorists.
- Bike lane (Class II) - A lane on a regular roadway, separated from the motorized vehicle right-of-way by paint striping, designated for the exclusive or semi-exclusive use of bicycles. Bike lanes allow one-way bike travel. Through travel by motor vehicles or pedestrians is prohibited, but crossing by pedestrians and motorists is permitted.
- Bike route (Class III) - Provides shared use of the roadway, designated by signs or permanent markings and shared with motorists.

According to the Monterey County 2008 General Bikeways Plan there are no existing or proposed bicycle facilities provided in the vicinity of the project site.

3.12.3 Regulatory Framework

County of Monterey

The County of Monterey has two primary planning documents, the 1982 *Monterey County General Plan* and the Central Salinas Valley Area Plan (Monterey County 1986), which provide goals, objectives and policies related to transportation and circulation.

Monterey County General Plan

Goal 37 To promote a safe, effective, and economical transportation system that will service the existing and future land uses of the county.

Policy 37.2.1 Transportation demands of proposed development shall not exceed an acceptable level of service for existing transportation facilities, unless appropriate increases in capacities are provided for.

Policy 37.5.1 The design and location of new development shall consider and incorporate provisions for appropriate transportation modes.

Central Salinas Area Plan

CVS Policy 40.1.2 The County shall pursue measures to obtain official Scenic Route designations from the state for Highways 146 and 25, Arroyo Seco Road, Bitterwater Road, and Elm Avenue.

Monterey County Regional Transportation Plan

The Transportation Agency for Monterey County (TAMC) is responsible for periodically completing a long-range transportation planning document known as the Regional Transportation Plan (RTP). The purpose of the RTP is to provide policy guidelines regarding planning and programming of transportation projects in Monterey County for the next twenty years. The RTP identifies existing and future needs, evaluates modes and alternatives, and determines what can be completed with anticipated funding. As required by the California Transportation Commission Guidelines, each Regional Transportation Agency shall develop and update goals, objectives and policies for inclusion in the Policy Element of the RTP.

TAMC Regional Impact Fee Nexus Study Update

In March 2008, TAMC updated the Nexus Study for a Regional Development Impact Fee. TAMC anticipates programming the fee revenue as part of its periodic Regional Transportation Plan update process, which is done every five years. The fee program itself will be updated to reflect changes in land use plans or shifts in transportation planning priorities to better mitigate the impacts of future growth. This update process will involve the following actions:

- Tracking status of construction, including percent complete and fee expended;
- Updating cost estimate of each project annually;
- Adding or deleting projects as conditions warrant, based on adopted transportation plans;
- Using an adopted travel forecast model to conduct deficiency plan and select link analyses;
- Recalculating maximum fee by zones;
- Recalculating revenue from regional fee program; and
- Assessing potential for adopting a revised fee structure in light of political feasibility and other funding sources.

Methodology

The Traffic Impact Analysis (TIA) analyzed Existing Plus Average Project Day for both 70 percent occupancy and 100 percent occupancy daily traffic levels of service on the study roadways and intersections. The trip generation rates were based on land use date prepared by the Institute of Transportation Engineers (ITE) and included trip generation for the resort hotel, single family homes, recreational homes and hotel employees. The TIA addressed the impacts associated with each of the four project phases.

Significance Threshold Criteria

In accordance with CEQA, the State CEQA Guidelines (including Appendix G) and agency and professional standards, a project impact would be considered significant if the proposed project would:

- Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;

- Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures or other standards established by county congestion management agency for designated roads or highways;

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks; or

- Substantial increase in hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).

Performance of the County's roads and highways is evaluated based on level of service (LOS) calculations. There are six levels of service representing varying roadway conditions ranging from ideal, LOS "A" to forced flow, LOS "F." Level of Service A represents free flow un-congested traffic conditions and Level of Service F represents highly congested traffic conditions with unacceptable delay to vehicles at intersections. The intermediate LOS represents incremental levels of congestion and delay between these two extremes.

Impact Analysis

Intersection and Roadway Segments Level of Service Impacts

Impact 3.12-1:	The Paraiso Springs Road/Clark Road intersection and the ten study roadway segments would operate at LOS A with the exception of Arroyo Seco Road between Fort Romie Road and Highway 101, which would operate at LOS B. In accordance with the County of Monterey significance criteria, this is considered an acceptable level of service. Therefore, the proposed project would result in a less than significant impact to study intersections and roadway segments. This would be a less than significant impact

The project site is located in a remote location and therefore by design would minimize the amount of short-distance convenience trips such as lunch hour restaurant clientele or short-term visits off-site from guests staying at the facility. The traffic impact analysis was however conservative and did not take these factors into consideration.

The traffic impact analysis analyzed the following intersections and roadway segments within the vicinity of the project site under "Existing" and "Existing plus Project" conditions:

- Intersection
    a. Paraiso Springs Road/Clark Road
- Roadway Segments
    b. Arroyo Seco Road (from Thorne Road to Clark Road)
    c. Arroyo Seco Road (from Fort Romie Road to State Highway 101)
    d. Fort Romie Road (from Foothills Road to State Highway 101)
    e. Foothill Road (from River Road to Paraiso Springs Road)
    f. Paraiso Springs Road (from Clark Road to Arroyo Seco Road)
    g. Paraiso Springs Road (southwest of Clark Road)
    h. Paraiso Springs Road (from the Project site to Clark Road)
    i. Paraiso Springs Road (Entrance to the project site)
    j. Clark Road (from Paraiso Springs Road to Arroyo Seco Road
    k. Arroyo Seco and Highway 101 Southbound and Northbound On and Off-Ramps

Project Trip Generation

The trip generation calculations must include the trips produced by the different uses on the site, and take into account the trip reduction measures the applicant has proposed as part of the project. Table 3.12.1, Project Trip Generation and Trip Reduction Summary, presented below, summarizes the trip generation and trip reduction measures used in the traffic analysis prepared by Hatch Mott MacDonald (2011).

The table shows that at build out without any trip reduction measures, the project would generate 885 daily trips. This calculation comes from using ITE trip generation numbers for the hotel, employees, and the two other types of residential units, then subtracting ten percent for overlap between the residential units and the resort.

To reduce the amount of traffic to the project site, the proposed project proposes a shuttle service for non-management employees. Satellite parking would occur at the existing park and ride lot and on Front Street in downtown Soledad, which has been endorsed by the City of Soledad (City of Soledad, Letter to the Monterey County Board of Supervisors, March 27, 2013). The shuttle service would remove a total of 492 employee trips per day from the area roadways.

Table 3.12.1 Project Trip Generation and Trip Reduction Summary

	No. Units/Employee	Daily Trips/Unit	Total Daily Trips
Trip Generation			
Resort Hotel (ITE330)	103	6.13	631
Residential (Residential Villas) (ITE210)	17	9.57	163
Residential/Recreational Homes (Condos)(ITE260)	60	3.16	190
Total Trips			**984**
Internal Trip Reduction (10%)			98
Net Trip Generation			**885**
Trip Reduction			
Employees taking shuttle	196	2.5	(492)
Guest Trips Eliminated			(40)
New Employee Shuttle Trips			36
New Guest Shuttle Trips			16
Net Trip Generation			**405**
Source: Hatch Mott MacDonald 2011			

In addition, a shuttle service would be available to guests arriving from the Monterey Peninsula Airport and for various types of day trips. It is assumed that 25 percent of the peak day check-in and check-out would involve 25 percent of the guest units and that 25 percent of the guests would arrive by air. It is assumed the 22 airport related trips would be replaced by the shuttle, and that 18 guest day trips would be replaced by the shuttle for a total reduction of 40 trips per day. The use of the shuttle would result in an additional 36 trips per day for employees and 16 trips per day for guest use for a total of 52 trips. The net trip generation after subtracting the reduction in employee and guest trips is 405 trips per day at build out of the site and assuming full occupancy.

Satellite Parking

The existing park and ride lot in Soledad provides 72 parking spaces of which between five and seven spaces are occupied on a daily basis leaving between 65-67 parking spaces available.

At buildout the day shift (largest shift) of the site would have 109 employees, of these 98 would use the shuttle from the park and ride lot. The trip reduction strategy assumes that large portion of these employees will live in Soledad and that one fourth (25%) of them will walk to the shuttle and not require any parking, one fourth (25%) will be what is termed a “kiss and ride drop off”, one fourth (25%) will car pool to the shuttle with at least two employees in a vehicle and use the Park and Ride and the last one fourth (25%) will take a single vehicle to the shuttle and use the Park and Ride. Translating this into required parking; those who walk or are dropped off would require no parking spaces,

those who share would require 12 parking spaces (24 employees with two employees per car) and those who drive alone would require 24 parking spaces requiring the use of approximately 36 Park and Ride spaces. This is would leave approximately 29 spaces available in the 65 space park and ride lot during the day. The peak demand will be at the change between the two largest shifts.

Project Traffic, Distribution and Assignment

The trip generation for the proposed project looked at a 70 percent occupancy, based on hotel occupancy rates of 68.2 percent occurring in the Monterey Peninsula in 2003. The trip generation also looked at 100 percent occupancy. Based on a 70 percent occupancy, the proposed project is anticipated to generate approximately 324 daily weekday trips (assuming the PM peak hour represents about eight percent of the daily traffic for the hotel and 10 percent for the residential areas), with 15 during the AM peak hour, 28 during the PM peak hour, and 64 during the Saturday peak hour.

On occasions when the proposed project reaches 100 percent occupancy, the proposed project is expected to generate approximately 405 daily weekday trips, with 12 trips during the AM peak hour, 15 trips during the PM peak hour, and 89 trips during the Saturday peak hour.

The anticipated project trip distribution and anticipated number of trips is shown in Table 3.12-2, Project Traffic Distribution and Assignment, below.

Table 3.12-2 Project Traffic Distribution and Assignment

Direction	Percentage	Project Daily Trips	
		Average (70 percent)	Peak(100 percent)
To/From the North			
Via Highway 101	60 percent	170	243
Via River Road/Fort Romie Road	5 percent	14	20
Via Foothill Road	5 percent	14	20
To and From the South			
Via Highway 101	10 percent	29	41
Via Arroyo Seco Road	20 percent	57	81
Total	100 percent	284	405
Source: Hatch Mott MacDonald 2008			

Table 3.12-3, Intersection Level of Service, on the following page shows the intersections examined and the corresponding level of services under existing conditions and with the project.

Table 3.12-3 Intersection Level of Service

Location	Existing Conditions (2009)		Existing + 70 percent Project Conditions		Existing + 100 percent Project Conditions		Long Term Cumulative Conditions	
	Volume (ADT)	LOS	Volume (ADT)	LOS	Volume (ADT)	LOS	Volume (ADT)	LOS
Arroyo Seco Rd (Thorne Rd to Clark Road)	1,800	A	1,866	A	1,896	A	3,100	A
Arroyo Seco Rd (Fort RomieRd to Hwy 101)	4,400	B	4,634	B	4,738	B	7,100	B
Fort Romie Rd (Foothill Rd to Arroyo Seco Rd)	2,200	A	2,216	A	2,224	A	3,600	A
Foothill Rd. (Fort Romie Rd. to Paraiso Springs Rd.)	220	A	236	A	244	A	260	A
Paraiso Springs Rd. (Clark Rd. To Arroyo Seco Rd.)	150	A	182	A	198	A	300	A
Paraiso Springs Rd. (Southwest of Clark Rd)	150	A	482	A	632	A	700	A
Paraiso Springs Rd. (Project site to Clark Rd.)	85	A	417	A	567	A	580	A
Paraiso Springs Rd. (Project Site entrance)	20	A	352	A	502	A	500	A
Clark Rd. (Paraiso Springs Rd to Arroyo Seco Rd.)	20	A	320	A	454	A	400	A
Arroyo Seco/Hwy 101 SB Off-ramp	2,000	A	2,100	A	2,145	A	2,840	A
Arroyo Seco/Hwy 101 SB On-ramp	550	A	567	A	574	A	760	A
Arroyo Seco/Hwy 101 NB Off-ramp	400	A	417	A	424	A	660	A
Arroyo Seco/Hwy 101 NB On-ramp	1,500	A	1,600	A	1,645	A	2,840	A

Source: Hatch Mott MacDonald 2008

Existing Plus Average (70 percent occupancy) Project and Existing Plus Average (100 percent occupancy) daily traffic would not have an effect on the level of service of study intersections and roadway segments as all roadway segments would operate at acceptable LOS A with the exception of Arroyo Seco Road between Fort Romie Road and Highway 101, which would operate at LOS B. The Paraiso Springs Road/Davis Road intersection would also remain at the same level of service as under Existing Conditions with implementation of the proposed project. Therefore, the proposed project would result in a less than significant impact to the study intersections and roadway segments with implementation of the proposed project.

Roadway Hazards

Impact 3.12-2:	Paraiso Springs Road is a rural road that will experience an increase in traffic with implementation of the project. The proposed project includes safety improvements on Paraiso Springs Road. This would be a less than significant impact

Appendix G of the CEQA Guidelines provides that a project would have a significant effect if the project would "substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses."

The American Association of State Highway and Transportation Officials Geometric Design Guidelines for Low Volume Roads states that "cross section widths of existing roads need not be modified except in those cases where there is evidence of a site-specific safety problem." The guidelines further indicate "the designer is discouraged at most sites from making unnecessary geometric design and roadside improvements. This establishes that the existing road network and roadway widths are adequate to accommodate existing traffic volumes with the exception of Paraiso Springs Road immediately outside of the project site.

Paraiso Springs Road between the project site and Clark Road will experience an increase in traffic from the existing 85 vehicles per day to approximately 409 vehicles per day under an average 70 percent occupancy. Under 100 percent occupancy, the proposed project would result in a traffic volume of approximately 557 vehicles per day. On an average day, Paraiso Springs Road would continue to be a relatively low volume road with a threshold of about 417 vehicles per day. To put the anticipated average daily traffic into perspective, Paraiso Springs Road is approximately two miles long between the existing gate at the project site and Clark Road. At approximately 40 miles per hour, it would take approximately three minutes to traverse this length of roadway. Only about one vehicle would be experienced in each direction every three to four minutes on Paraiso Springs Road. During the peak hour, only one or two vehicles would be encountered along this entire stretch of roadway as vehicles enter or exit the project site.

Paraiso Springs Road is a low volume road with low travel speeds which minimizes the potential for vehicular conflicts. The existing roadway is sufficient to accommodate the existing plus project traffic volumes. Studies have demonstrated that roadway delineation including pavement striping and curve warning signs can have a substantial beneficial effect in accident rates on rural roadways.

The proposed project includes a phased Roadway Improvement Plan (Hatch Mott MacDonald, 2008) that was prepared by the project applicant to provide safety improvements on Paraiso Springs Road. The phased improvements as shown on the plans prepare by Altas Land Surveys, Inc. (2011) include:

Phase 1: Install warning signs for curves, road narrows with advisory speed signs, and roadway delineations.

Phase 2: Widening roadway to a width of 18' from the project entrance to approximately 1300 feet east of the project boundary and install controlled "T" intersection at curve approximately 1225 feet from project boundary.

Phase 3: Widen roadway to a width of 20' as feasible and install centerline stripe from point 1300 feet from project boundary east to 3900 feet east of project boundary.

Phase 4: Widen roadway to a width of 20' as feasible and install centerline stripe and edgeline stripping from point 3900 feet from project boundary east to 6500 feet east of project boundary.

These improvements will be constructed prior to occupancy of each phase for the proposed project. With implementation of these improvements as part of the proposed project, the proposed project would have a less than significant impact on safety.

Emergency Access

Impact 3.12-3: The proposed project will provide adequate site access and adequate internal circulation for emergency responders. This would be a less than significant impact

The concern for emergency access involves insuring adequate site access and adequate internal circulation for emergency responders. The public roads leading to the project site are of adequate width and grade to provide access to emergency service vehicles without limitation. The onsite circulation has been designed such that there is emergency vehicle access in close proximity to all buildings and there are no dead end access points which would require emergency vehicles to need to back out. Turn-around locations are provided at the end of the single family timeshare villas and at the end of the Hillside Village condominiums. A service access road to the spa portion of the site will also provide emergency access to the hotel and spa which do not have immediate vehicular access. This service road connects to the timeshare condominium access road making a complete loop through the site. Therefore, the proposed project would have a less than significant impact on emergency access.

Alternative Transportation

Monterey-Salinas Transit (MST) provides fixed-route bus service from Line 23 between Salinas and King City via U.S. Highway 101 with stops at various locations along the highway at Chualar, Gonzales, Soledad, and King City. Pedestrian and bicycle facilities are not provided on roadways in the vicinity of the project site. However, the proposed project would provide a private shuttle service for employees from the park and ride lot and guests from the Monterey Peninsula Airport, as well as to activities outside of the area to reduce project trips to and from the project site. Therefore, the proposed project would not conflict with alternative transportation programs, and would have no impact in this regard.

Parking Capacity

A total of 310 parking spaces would be provided at the project site for the resort hotel. The Monterey County Zoning Ordinance parking requirements (Section 21) would require a total of 587 spaces. This is based on one parking space for 103 resort hotel units; two per every three employees; one per 50 square feet of restaurant use; one per 250 square feet per retail use, two per two- bedroom condominium and 2.2 per three-bedroom condominium.

As discussed above, the shuttle system will not only reduce vehicle trips, but will also reduce the number of required parking spaces. Assuming that 20 percent of all guests arrive by shuttle from the airport and that 90 percent of the employees will shuttle from off-site; and that 80 percent of the restaurant and retail patrons will be from the hotel, there would be a credit of 284 spaces for a net total of 303 parking spaces. This is summarized in Table 3.12-4, Project Parking Requirements and Adjustment.

Table 3.12-4 Project Parking Requirements and Adjustments

Use	Measurement	Zoning Ord Parking Standard	Zoning Ord Parking Spaces Required	Adjusted Parking Spaces
Guest Rooms	103 rooms	1/room	103	82
Employees	109 employees	2/3 employees	73	7
Restaurants	7,570 sq ft	1/50 sq ft	151	30
Retail	16,050 sq ft	1/250	64	13
Day Spa	2,500 sq ft	1/50 sq ft	50	50
Institute	5,150 sq ft	1/250 sq ft	21	21
Condos 2 bdrm	34 units	2/unit	68	54
Condos 3 Bdrm	26 units	2.2/unit	57	46
Total Required			**587**	**303**

Source: County of Monterey Zoning Ordinance parking requirements (Section 21)

No reductions in parking are provided for the day use facilities. Parking at the detached single family residential lots would be provided at two spaces per single-family residential unit. Therefore, adequate parking would be provided and there would be no impact associated with inadequate parking capacity at the project site.

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