450 Acres of Land Ready for Development

4687, 4637, 4483, and 4283 Hill road, Lakeport, California

$3,500,000 Purchase Price; Seller will consider owner-financing.

100 Water Extension fees paid and included in purchase price.

4687 Hill Rd APN 003-046-670-000 104.17 Acres 4637 Hill Rd APN 003-046-660-000 150.91 Acres

4483 Hill Rd APN 005-011-060-000 162.45 Acres 4283 Hill Rd APN 005-011-070-000 32.40 Acres

Beautiful land comprises of 450 acres of open land zoned PDR and PDC. This property had been previously approved as a golf course development with custom homes. More recently it was approved as the Cristallago Development with homesites and vineyards. Build your own custom dream home on this beautiful site or develop the land as an exquisite development project. The wonderful lake views as well as the majestic mountain views give this exciting parcel tremendous possibilities for future growth and financial benefits.

Contact Gerarda Stocking, CA RE Broker for more details or to make an appointment to view this property.

Gerarda Stocking, Real Estate Broker

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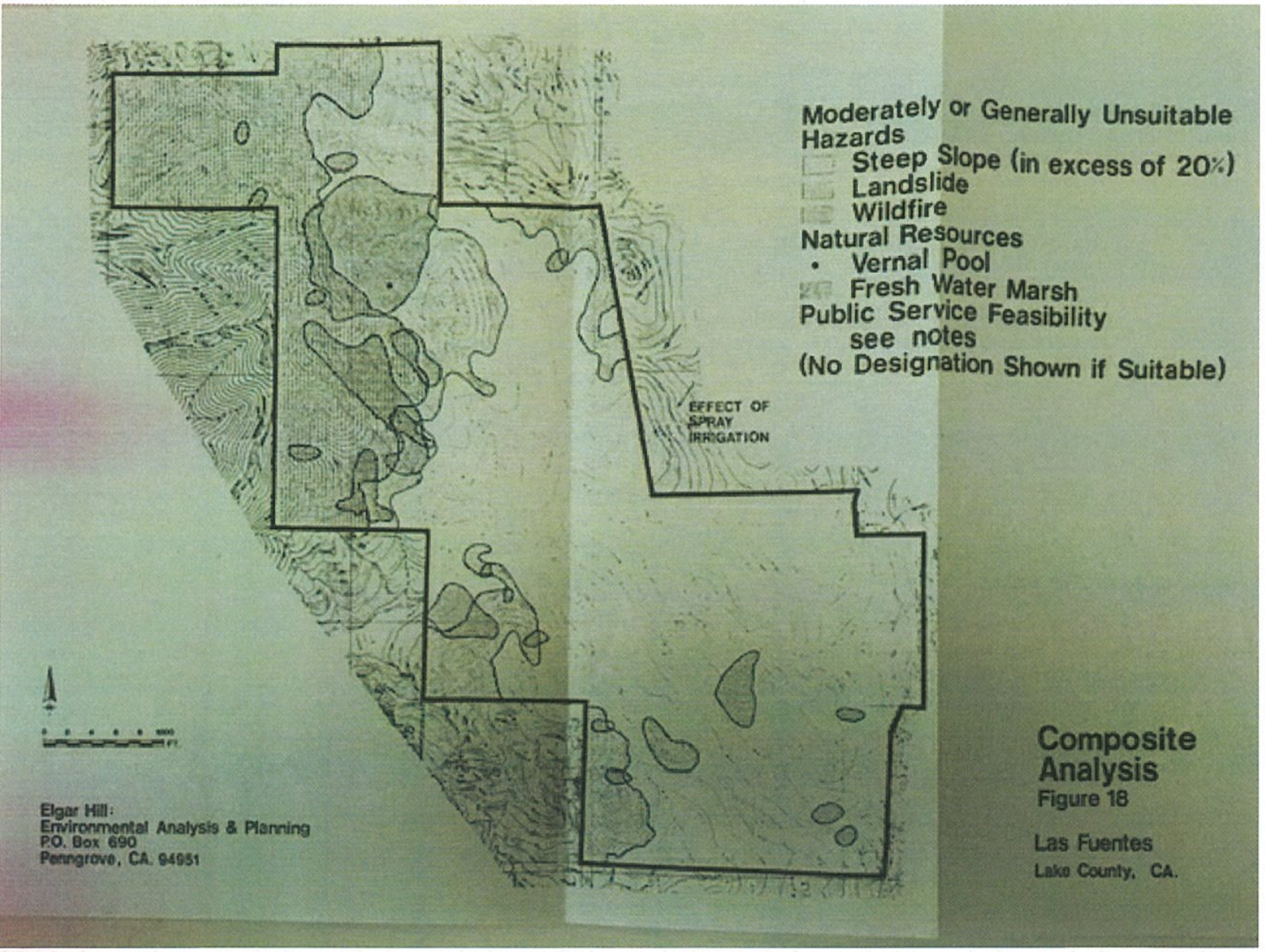
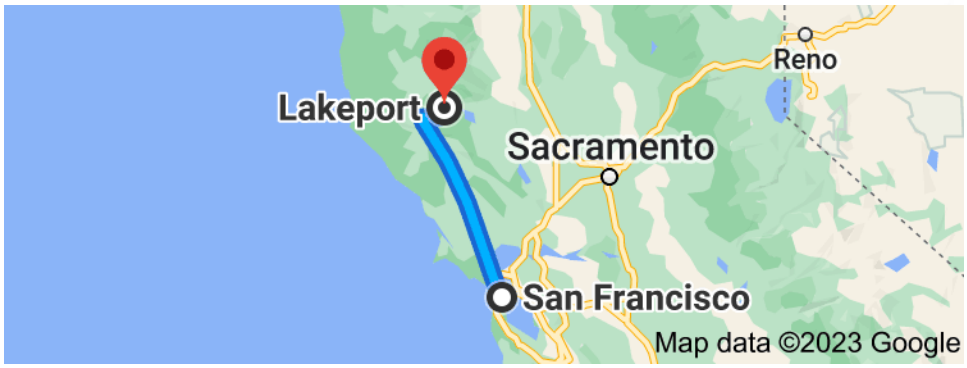
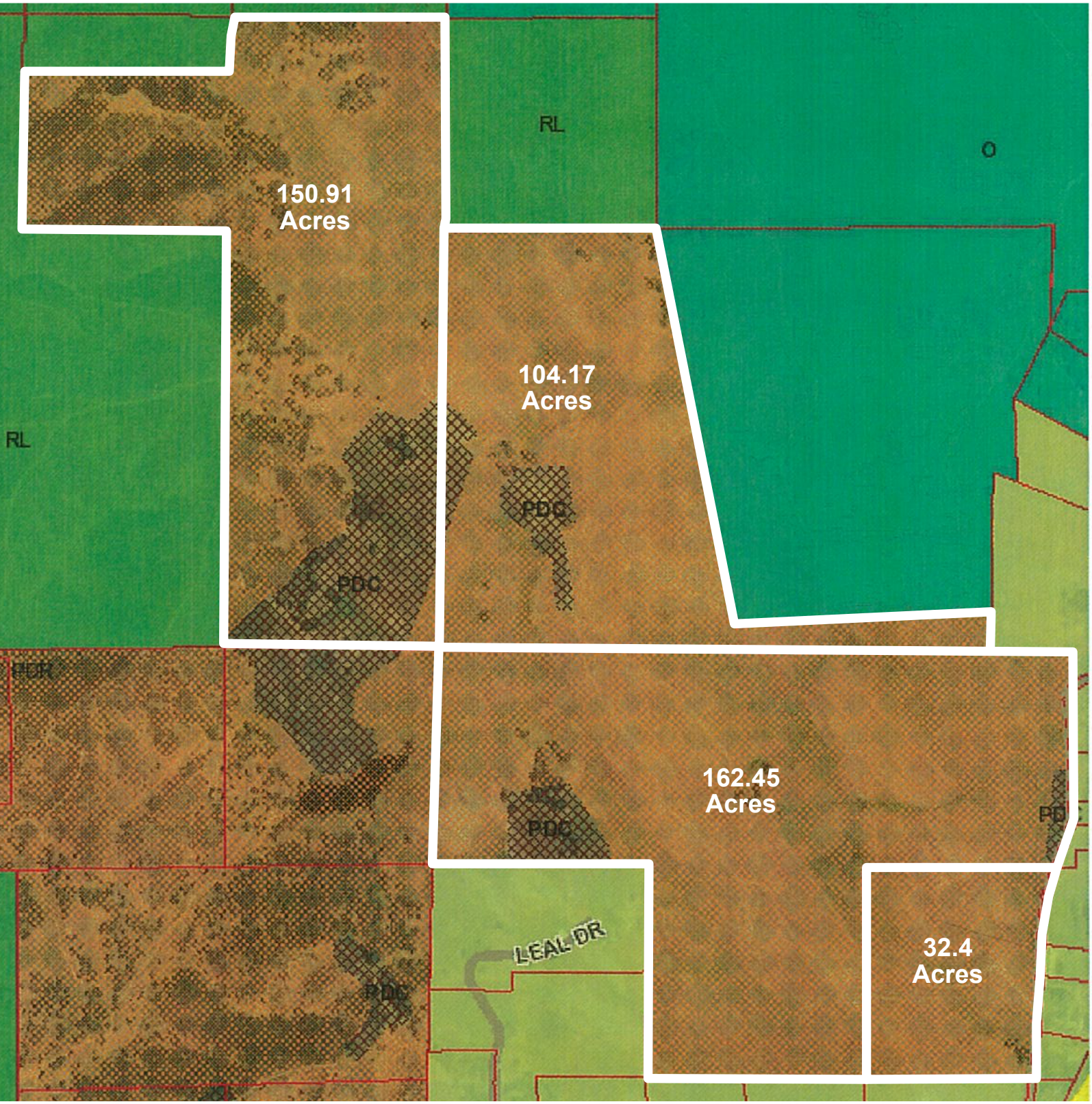
Virtual Winery Estates

450 Acre Hill Road



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Lake County Planning Commission gives approval to updated Cristallago project plans

ELIZABETH LARSON POSTED ON MONDAY, 02 MAY 2016 00:40
02 MAY 2016

The project update went before the commission at its Thursday meeting.

Cristallago Development Corp. of Gridley, headed by President Matt Boeger, requested the certification of addendum to the project's environmental impact report, an amendment to the general plan of development and a time extension to the project's general plan of development, all of which the commission would grant in unanimous votes.

In 2010, the project was the focus of a lawsuit filed by the Sierra Club Lake Group against the county of Lake and Cristallago Development Corp. following the Board of Supervisors' decision to give the project the go-ahead.

In particular, the lawsuit had alleged that the county had violated the California Environmental Quality Act by certifying the project's environmental impact report, which the suit claimed had failed to thoroughly address environmental issues and project impacts.

The lawsuit, which was settled in August 2010, called for additional mitigations and studies, and included the addition of new language to the general plan regarding mixed use resort proposals outside of community growth boundaries.

Planning staffers Josh Dorris, Audrey Knight and Peggy Barthel presented the report on the project to the commission on Thursday.

They explained that, as originally submitted, the project was to have included a 187-acre, 18-hole Jack Nicklaus signature golf course; 587 acres of open space; 650 single family homes; 325 resort units; a 25,000-square-foot clubhouse/Tuscan Hillside Village; and an entryway commercial center.

The project's plan has been altered and Boeger now proposes to remove the golf course and replace it with a 292-acre Cabernet Sauvignon vineyard.

The revamped Cristallago also would have 624 acres of open space, of which 292 acres would be the sustainably farmed vineyard and 300 acres would be dedicated in perpetuity as a nature preserve. A 15-acre parcel at the project's main entrance, to be

project's highest points; a community center and staffed “kid's club”; fitness center; swimming pool; a 17,000-square-foot commercial wine village that would include 7,000 square feet of wine tasting, 10,000 square feet of retail space – including a 75-seat restaurant – and a visitor center, with the commercial center relocated to the southern end of the project footprint.

Cristallago as now envisioned would be built in three phases. Phase one entails preparing, planting and farming the vineyard only over a 15- to 20-year period.

Dorris said main concerns were hydrology and water quality, and a preliminary assessment on water supply showed that the wells that would supply the project would be independent from the Scotts Valley aquifer. Those wells would meet the vineyard's required peak month irrigation flow rate, with subsequent phases needing to annex to County Service Area 21 in order to obtain the necessary water supply.

Barthel said Cristallago's original environmental impact report looked at impacts when a golf course was still part of the plan.

Regarding grading, a vineyard is not much different than a golf course in terms of environmental impact, she said, thus staff felt an addendum to the environmental impact report was appropriate.

It was noted during the meeting that the county's agricultural commissioner was not necessarily a proponent of the project due to the proximity of the wine crush facility to homes.

As in the past, neighbors raised objections to the project, including one man who said he and his wife recently retired to the area and had bought land adjacent to the project, but had no idea that Cristallago was proposed next door.

Other neighbors to the project, John Lee and Brad Peters – both of whom have been vocal opponents of Cristallago since its inception more than a decade ago – were on hand to once against lodge their protests.

Lee called Cristallago “just the same old mudball” wrapped up in a new ribbon, while

“There is tremendous justifiable concern throughout the community about water,” she said, adding, “This is a great big project, they can afford to do a new evaluation of the water.”

Brandon added that she believed the updated plan was a “major improvement” over the previous one.

Boeger told the commission that he started working on the project in 2004, and spent six years and almost $3 million to get the project through the proper studies, including the 2,500-page environmental impact report.

He said no one before this project or since it was proposed has conducted this level of study.

Boeger noted that the project's layout has been reconfigured to place the core commercial center closer to the main access point off of Highway 29 and Park Way.

The main change, he said, was to remove the golf course, which was going to cost $20 million to build.

“It became economically unsustainable in today's marketplace,” he said, explaining that adding the vineyard was more in keeping with the county and will offer cash flow.

He said the revised Cristallago concept is modeled after the Napa Valley Reserve project, which is a small boutique community facility vineyard.

While there will be some label making and design, that will account for 5 percent of the vineyard's production, with Boeger adding that they are not proposing to conduct a full-scale winemaking operation at the site.

He estimated 1,000 construction jobs will be created and said $20 million in advertising will promote the new Cristallago.

The revised project also will have reduced water usage, with the vineyard estimated to

Commission Chair Joe Sullivan asked Boeger about how many cases of wine would be produced by the boutique winery. Boeger said he didn't have a specific number.

When Sullivan asked if he already had contracts for the winegrapes, Boeger said he hasn't made commitments yet.

Commissioner Don Deuchar asked about setbacks for homes from the agricultural operations. Boeger said he has developed such projects before and knows how to orient them. When Deuchar asked if people would understand that they would be living within 100 feet of the agricultural work, Boeger said yes, adding that they'll be part owners in it.

Sullivan said he liked the project overall, but had questions about the phasing. Knight said it was hard to be specific about that much acreage.

Commissioner Bob Malley questioned the hydrology reports, with Knight noting recent water and well testing has been done.

Deuchar said that while the project requires a certain leap of faith, he believed the risk-reward ratio tilted toward the reward side.

Commissioner Gladys Rosehill was concerned about how the project has changed, and also
considered the winegrape growing project a leap of faith. Otherwise, she said she thought it was a great idea for the county.

Deuchar offered all three motions – certifying the environmental impact report addendum, the general plan of development amendment and extending by two years the time for the project's general plan of development – each of which the commissioners approved 5-0.

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Figure 3 - SITE PLAN

Prev (/component/content/article/142-local-government/46143-lake-county-public-works-department-replacement-of-bridge-over-clover-creek-at-bridge-arbor-north?Itemid=437)

Next (/component/content/article/142-local-government/46140-supervisors-to-reconsider-community-choice-aggregation-discuss-behavioral-health-issues?Itemid=437)

IV. ENVIRONMENTAL IMPACT ANALYSIS
G. GEOLOGY & SOILS

INTRODUCTION

This section addresses the following: (1) exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, liquefaction, or landslides; (2) potential for soils erosion; (3) potential to be located on an unstable soil unit; (4) potential to be located on expansive soil; and (5) consistency with Area Plan Policies. In addition, the potential cumulative geology and soils impacts of the project in combination with all known related projects are evaluated in this section.

METHODOLOGY

The environmental setting was compiled from information taken from project site-specific reports, state, and regional planning policy maps. The impacts analysis was derived by considering the development proposed by the project with respect to applicable policies, existing on-site and nearby geologic hazards and soils and in the cumulative geographic context. The environmental setting and analysis in this section is based upon review of the following documents:

- Fault Activity Map of California, California Division of Mines and Geology, 1994;
- Geologic Map and Sections of the Lakeport Quadrangle, County of Lake, California, United States Geological Survey, 1967;
- Soil Survey for County of Lake, California, USDA Natural Resource Conservation Service, 2005;
- California Division of Mines and Geology Probabilistic Seismic Hazards Assessment for the State of California, CDMG 1996 (rev. 2002);
- Digital Images of Official Maps of Alquist-Priolo Earthquake Fault Zones of California, Central Coast Region and Northern and Eastern Region, California Department of Conservation, Division of Mines and Geology, 2000;
- California Seismic Hazard Map based on Maximum Credible Earthquakes, California Department of Transportation, 1996;
- County of Lake General Plan, 1981;
- County of Lake Draft General Plan, 2006; and
- Lakeport Area Plan, 2000.

The methodology used to determine the environmental setting and impacts of the proposed project to geology and soils included the following:

- Review of previous geologic and geotechnical reports prepared for the former Las Fuentes project at the same site by Cleary Consultants, 1994.

ENVIRONMENTAL SETTING

Regional Geology and Topographic Setting

Geology and soils in the County of Lake area are mainly a consequence of the long history of active tectonics near the margin between the Pacific and North American Tectonic Plates, patterns of climate change, and changing land use and vegetation patterns. Typical geologic and soils related constraints on development within the County of Lake are strong seismic shaking; slope instability that may cause landslides, debris flows and other types of slope failure; and basic soil instability, including settlement, shrinking and swelling of expansive soil, and fissuring or cracking of the ground. These constraints are interrelated and may be exacerbated by periodic heavy rains causing soil erosion, saturation of the ground, and flooding.

The proposed project site is located in the foothills region on the northwestern flank of the Mayacamas Mountain Range in the northern California Coast Range geomorphic province. The main bedrock unit is the Jurassic to Cretaceous age Franciscan Complex. The Franciscan complex is composed of weakly to strongly metamorphosed greywacke (sandstone), argillite, limestone, basalt, serpentinite, chert, and other rocks. This rock was accreted onto the edge of the North American continent during the long period of active subduction of the Farallon and Pacific Plates beneath the North American Plate. The formation is derived from Jurassic oceanic crust and pelagic deposits that are overlain by Late Jurassic to Late Cretaceous sedimentary deposits. Metamorphic grade in this rock is highly variable, ranging from slightly metamorphosed-high-pressure, low-temperature metamorphic minerals to high-grade metamorphic blocks in a sheared but relatively un-metamorphosed argillite matrix which reflects the complicated history of the Franciscan complex. This complicated history combined with shearing from the subsequent San Andreas right-lateral fault zone formed the intensely complex Franciscan assemblage of today.

Regionally, Quaternary age alluvium and non-marine terrace sediments of unconsolidated sand, silt, gravel and lake sediments unconformably overlay the Franciscan Bedrock.

Seismicity and Seismic Hazards

Seismic hazards include ground motion, ground surface fault rupture, liquefaction, settlement, lateral spreading, and seismically-induced slope instabilities. The County of Lake is located in the tectonically active Coast Ranges Province of northern California. Active tectonics of the region are controlled by the tectonic boundary between the North American and Pacific Tectonic Plates, the San Andreas Fault System. The primary fault of the system is the San Andreas Fault, which last experienced major fault displacement in the Northern California area during the 1906 Great San Francisco Earthquake. More recent seismic activity on the fault has included the 1989 Loma Prieta earthquake centered in the Santa Cruz Mountains.

The San Andreas Fault system includes other active faults. The Maacama fault zone is considered active by the California Geological Survey, and is located about 9 miles to the southwest in the Mayacamas Mountains. Other active faults in the region include: The Konocti Bay fault 19 kilometers to the southeast; the Bartlett Springs fault 40 kilometers to the north; the Hunting Creek fault 50 kilometers to the southeast; Rogers Creek fault 58 kilometers to the south; the San Andreas fault 62 kilometers to the southwest; and the Dunnigan Hills fault 80 kilometers to the southeast. Additionally, there are a number of potentially/conditionally active (show evidence of surface rupture within the past 700,000 years) faults in the region, also listed below. No faults zoned as active and subject to the effects of surface fault rupture have been mapped as crossing the project site. Table IV.G-1 presents a summary of active and potentially active faults within 80 kilometers of the project site.

Strong ground shaking resulting from nearby or distant earthquakes represents the greatest seismic hazard in the County of Lake. The intensity of ground shaking at any particular site is a function of many factors including: (1) earthquake magnitude; (2) distance from the epicenter; (3) the duration of strong ground motion; (4) local geologic conditions (soil characteristics and topography); and (5) depth to bedrock. Probable sources of seismically induced ground shaking which could significantly affect the County of Lake area are summarized in Table IV.G-1.

Table IV.G-1
Regional Faults and Seismicity

Fault Segment	Approx. Distance from fault (km)	Direction from Site	Maximum Credible Earthquake Magnitude
Maacama	14	Southwest	7.25
Big Valley	5	South	6.25
Collayomi	18	Southeast	6.5
SR-1 East	18	South	6.0
Konocti Bay	19	Southeast	6.5
SR-1 West	22	Southwest	6.0
Bartlett Springs	40	Northeast	6.75
Hunting Creek	50	Southeast	6.75
Rogers Creek	58	South	7.0
San Andreas	58	Southwest	8.0
Dunnigan Hills	80	Southeast	6.5

According to California Geological Survey criteria, faults showing evidence of rupture during the Holocene (past 11,000 years) are considered active. Several nearby faults are considered active since they show evidence of surface rupture during the past 11,000 years. If these faults ruptured, they would generate an earthquake that would shake the ground very intensely in this region.

Due to the proximity of the site to active seismic sources, the probabilistic seismic hazards assessment for the State of California concluded peak ground acceleration for the area to be approximately 35 percent of the acceleration due to gravity, with a 10 percent probability of being exceeded during the next 50 years. This would correspond to Modified Mercalli intensity as high as VI, which is considered moderate ground shaking. The Modified Mercalli earthquake intensity scale is presented in Table IV.G-2.

Table IV.G-2
Modified Mercalli Earthquake Intensity Scale

Scale	Intensity	Effects
I		Not felt.
II		Felt by persons at rest, on upper floors, or favorably placed.
III		Felt indoors. Hanging objects swing. Vibration like passing of light trucks.
IV		Hanging objects swing. Vibration like passing of heavy trucks. Standing motorcars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV, wooden walls and frame creak.
V	Light	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.
VI	Moderate	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Objects fall off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and poorly constructed or weak masonry cracked. Trees, bushes shaken (visibly, or heard to rustle).
VII	Strong	Difficult to stand. Noticed by drivers of motorcars. Hanging objects quiver. Furniture broken. Damage to poorly constructed or weak masonry. Weak chimneys broken at roofline. Fall of plaster, loose bricks, stones, tiles, and cornices. Some cracks in average unreinforced masonry. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged
VIII	Very Strong	Steering of motorcars affected. Damage to average masonry and partial collapse. Some damage to reinforced masonry, but not to that specially designed for seismic loading. Fall of stucco and some masonry walls. Collapse of chimneys, factory stacks, monuments, towers, and elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.
IX	Violent	General panic. Poorly built or weak masonry destroyed; average unreinforced masonry heavily damaged, sometimes with complete collapse; reinforced masonry seriously damaged. (General damage to foundations.) Frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluvial areas sand and mud ejected, earthquake fountains, sand craters.
X	Very Violent	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.
XI~~I~~	Very Violent	Rails bent greatly. Underground pipelines completely out of service.
XII	Very Violent	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air.

Regional Volcanism

The County of Lake is home to the westernmost site of Quaternary Volcanism in the State of California. The Clear Lake volcanic field includes lave dome complexes, cinder cones, and maars (a roughly circular, flat-bottomed volcanic crater of explosive origin that is often filled with water) of late Pliocene to early Holocene age. Mount Konocti, located 12 miles south of the project site, is a composite dacitic lava dome and the largest feature in the field. Volcanism in the field has been largely non-explosive, with only

one major airfall tuff, and no major ashflows. The most recent eruptive activity was about 10,000 years ago forming maars and cindercones along the shores of Clear Lake. This volcanic field also includes the Geysers geothermal field, which is the largest producing geothermal field in the world, producing enough electricity to power the City of San Francisco twice over. In the unlikely event of renewed volcanic activity in the Clear Lake area, effects on the proposed project could include diminished air quality due to ashfall.

PROJECT SITE

Site Topography

The project site is an irregularly shaped parcel in the low foothills to the west of Clear Lake. The property is characterized by low, serpentine ridges with gentle (7%) to moderately steep (42%) slopes. These ridges are intervened by mélange shale lowlands. Much of the terrain consists of weak soils that undergo gradual downhill creep in addition to landslides. The force of soil creep is directly proportional to soil inclination, the soil's plasticity, water content and expansion potential.

The northern and western portions of the property are more rugged with steeper slopes that support the growth of a number of oak and other trees. The eastern portion of the property (proposed for residential and portions of the golf course) is vegetated by numerous boulders, sparse grasses, and few trees. Slope gradients in the areas intended for residential development generally do not exceed 20 percent. Drainage for the Northeast portion of the site is to Lyon's Creek, while drainage for the southwest is to Scott's Creek. Both creeks discharge downstream to Clear Lake.

Area and Site Geology

The project site is located near Clear Lake in the foothills 1.3 miles to the west-northwest of Rocky Point. Bedrock consists of Franciscan mélange, with Mesozoic aged ultra-mafic inclusions. The Franciscan mélange consists of large blocks of coherent sandstone, serpentine, and glaucophane schist within an intensely sheared matrix. A large, northwest trending ridge of serpentine bedrock separates the eastern area, intended for single-family home development, from the less densely developed area to the west. Numerous springs and seepages occur on the hillside along fractures and geologic contacts.

Two ancient, inactive faults, which separate blocks of Franciscan Melange from blocks of serpentine, were mapped by Cleary Consultants generally following the northwest trend of the eastern serpentine ridge. These are thought to be thrust and normal faults related to ancient mountain building, and are inconsistent with the currently active tectonism consisting of predominantly right lateral strike slip motion. These faults are not considered active by the State of California.

Soils

The United States Department of Agriculture Natural Resource Conservation Service published a soils survey for the County of Lake, California. The soils present at the project site, their locations on the project site, and probable limitations on development, are listed below. See Figure IV.C-2 (Local Soils Types) in Section IV.C (Agricultural Resources) for a map of soils on the project site.

The Bressa-Millsholm loam with 15 – 30% slopes is a combination of multiple soils series too intricately mingled to map separately. This unit is approximately 45 % Bressa loam, and 35% Millsholm loam with small inclusions of Etsel, Hopland, Maymen, Skyhigh, and Snook soils. This soil covers part of the central portion of project site. Project construction on this soil will include roads and holes 1 and 2 of the golf course. Limitations to road construction on this soil series include slopes greater than 15%, hard bedrock at a depth less than 20 inches, low soil strength, and a moderate shrink-swell potential. Limitations to golf course construction also include an available water capacity of 2 to 4 inches.

The Henneke-Montara rock outcrop complex with 15-50% slopes is mainly on hills and mountains. Like the above soil series this one consists of multiple varieties too intricately mingled to map separately. The unit is about 40% Henneke gravelly loam, 30% Montara clay loam, and 15% Rock outcrop. This soil covers much of the eastern portion of the project site. Project construction on this soil series would include dwellings, roads, and holes 11 through 17 of the golf course (including four ponded water hazards). Limitations to dwelling construction in this area include: slopes greater than 15%, hard bedrock at a depth of less than 20 inches, and a moderate shrink-swell potential. Limitations to road construction also include low soil strength. Limitations to golf course construction also include an available water capacity of less than 2 inches, and the presence of 25% to 50% gravel sized fragments.

The Sleeper-Variant Sleeper loam is made up of about 50% Sleeper Variant loam and 35% Sleeper loam; the remaining 15% is a mixture of Millsholm soils and rocky outcrops. These soils cover the easternmost portion of the project site, near the planned north entry. Project construction on these soils will include roads and single-family dwellings. Limitations to construction of dwellings include slopes greater than 15%, and a moderate to high shrink-swell potential. Limitations to road construction also include low soil strength.

The Skyhigh-Millsholm loam, 15% to 50% slopes, is made up of about 45% Skyhigh, 25% Millsholm, and 30% minor components. This soil covers the central part of the project site. Project construction on this soil would include roads, single-family dwellings, small commercial buildings and parts of the golf course. Limitations to construction of dwellings and small commercial buildings include: slopes greater than 15%, hard bedrock at a depth of less than 20 inches, and a moderate to high shrink-swell potential. Limitations to road construction also include low soil strength. Limitations to golf course development also include an available water capacity of two to four inches.

The Maymen-Millsholm-Bressa complex, 30% to 50% slopes, is made up of 30% Maymen, 20% Millsholm, 15% Bressa, and 35% minor components. This series covers the westernmost portion of the project site, west of the Spider Mountain Preserve. Proposed construction in this area includes roads, single family dwellings and an equestrian facility. Limitations on dwelling construction include: slopes

greater than 15%, hard bedrock at a depth of less than 20 inches, and a moderate shrink-swell potential. Limitations on road construction also include low soil strength.

The Maymen-Hopland-Mayacama association, 50% to 75% slopes, is made up of 40% Maymen, 20% Mayacama, 20% Hopland and 20% minor components. This series covers parts of the western portion of the project site, surrounding and inclusive of the Spider Mountain Preserve. Proposed construction in this area includes roads and single-family dwellings. Limitations on dwelling construction include slopes greater than 15%, hard bedrock at a depth of less than 20 inches, and a moderate shrink-swell potential. Limitations on road construction also include moderately low soil strength.

The Lupoyama silt loam, protected, includes 85% Lupoyama silt loam and 15% minor components. This series covers the southwestern corner of the site, and proposed construction includes a portion of the golf course. Lupoyama soil properties do not indicate any limitations to golf course development.

The Manzanita loam, with 5% to 15% slopes, is a very deep, well-drained soil, formed on terraces. It formed in alluvium derived from mixed rock sources. Typically the upper 5 inches of the surface layer is light yellowish-brown loam and the lower 14 inches is strong brown loam. The upper 9 inches of the subsoil is strong brown loam and the lower 56 inches is variegated strong brown and yellowish red clay loam. Small areas of this soil may have gravelly subsoil. Permeability of this Manzanita soil is slow. This soil covers the southern portion of the parcel near the south entry. Planned construction in this zone includes roads, dwellings and holes 3, 6, and 7 of the golf course. Limitations to dwelling construction include moderate shrink-swell potential. Limitations for road construction also include moderate soil strength. Limitations to golf course development include 8% to 15% slopes.

In addition to the limitations listed above, all soil types found at the site are highly to severely susceptible to erosion.

Groundwater

Groundwater was encountered at depths ranging from eight to 25 feet below ground surface in six of the twenty borings completed by Cleary Consultants. Seepage was encountered at depths ranging from 1.5 to 9 feet below ground surface in 12 of the 30 backhoe pits dug by Cleary Consultants. The average depth at which seepage occurred was three feet below ground surface. Water encountered in the pits was located near the contact between bedrock units and the native soils, and thus may reflect seasonal conditions. Fluctuations in groundwater level may fluctuate due to variations in rainfall, temperature, and other factors not apparent at the time measurements were taken.

Slope Stability

Slope stability is expected to be a major concern as natural slopes on the site and the general vicinity have experienced various forms of slope instability. A geologic map prepared by Cleary Consultants in 1984 for the Las Fuentes project included many landslides and areas of soil creep. Three separate landslides were mapped in the eastern portion of the site intended for residential development, as well as multiple in the more steeply sloping area intended for the Hillside Resort Village to the northwest. Most of the landslides occurred in areas underlain by Franciscan mélange. Additionally, soil creep was observed on

the eastern facing slopes of the eastern area intended for residential development. The soils covering the site are highly susceptible to erosion and construction activities may cause further slope instabilities.

Expansive Soils

Soil expansion is a phenomenon in which clay and silt soils expand in volume as a result of an increase in moisture content, and shrink in volume upon drying. Changes in soil volume as a result of moisture fluctuations, including seasonal fluctuations, can cause damage to concrete slabs, foundations and pavements. Expansive soils are generally identified by use of two types of soil tests. Expansion index tests determine the potential for expansion of soils. Soils with expansion indices greater than 20 have a potential for damaging site improvements. Atterberg limits testing, including liquid limit and plastic limit testing, is another type of physical properties test used to determine the plasticity index and the potential for soil expansion. Soils with plasticity indices of 12 and above are considered to be expansive.

The United States Department of Agriculture soil survey for the project area indicates a high shrink-swell potential in the soils of the eastern portion of the project site. This area is intended for the highest density development of single-family homes. The geotechnical report for the Las Fuentes project in 1984 classified soils as highly expansive, but gave no data. Expansive soils are likely to be found in this area and a further geotechnical investigation is warranted.

Primary Seismic Hazards

Surface Fault Rupture A number of active and potentially active faults are present in the region. According to criteria of the State of California Geological Survey, active faults are faults that have experienced surface rupture within the last 11,000 years. The Alquist-Priolo Earthquake Fault Zoning Act of 1972 initiated a program of mapping active and potentially active faults (faults with displacement within Quaternary time- the last 1.6 million years). According to the program, active faults must be zoned and development projects within the Earthquake Fault Zones investigated to establish the location and age of any faulting across the development site. Active and potentially active faults in the County of Lake have undergone extensive investigation in the past. Under the Alquist-Priolo Earthquake Fault Zoning Act, the California Geological Survey has established Earthquake Fault Zone (EFZ) boundaries.

According to these maps, the project site is not located within an EFZ. The nearest EFZ is for the Maacama Fault, located approximately 9 miles west of the site. The Konocti Bay fault zone, located approximately 12 miles to the south, is the next closest. Thrust and normal faults were mapped across the site in 1984 by Cleary, but the sense of movement on the faults is not consistent with present fault activity in the region, which is predominantly right lateral strike-slip. Since no active faults are mapped across the site on any published maps and no other evidence of active faulting was documented, the risk of surface ground rupture at the project site is considered very low.

Secondary Seismic Hazards

Ground Shaking The Coast Range geomorphic province is a seismically active region and experts consider it likely that the site will be subjected to seismically induced ground shaking within the design life of the development. According to a recent study completed by the Working Group on California

Earthquake Probabilities (WGCEP) assessing the probability of earthquakes in the San Francisco Bay Area, there is a 62 percent probability that a major earthquake of Richter Magnitude 6.7 or greater will strike the region during the next 30 years. A major earthquake on any of the San Francisco Bay area faults, as well as those smaller faults within the County of Lake, would likely cause ground shaking at the site and future seismically induced ground shaking is anticipated at the site.

The intensity of ground shaking will vary with the distance and magnitude of the earthquake causing the ground to shake. There is likely to be at least strong shaking of the site due to a major earthquake along the Maacama, Rodgers Creek, San Andreas, or other nearby faults. According to the California Geologic Survey's Probabilistic Seismic Hazards Assessment, a peak ground acceleration of 35 percent of the acceleration due to gravity is expected, with a 10 percent chance of being exceeded within the next 50 years. This co-relates to approximately VI on the modified Mercalli intensity scale, moderate.

Seismically Induced Liquefaction Liquefaction is the temporary transformation of saturated, cohesionless soil into a viscous liquid as a result of ground shaking. The Franciscan Complex bedrock underlying the site has a very low susceptibility to liquefaction. Therefore, the potential for liquefaction occurring in soil and bedrock at the site during seismic shaking is very low.

Seismically Induced Slope Failure Seismically induced slope failure is another secondary seismic hazard. During earthquake-induced ground shaking, unstable slopes can fail, causing landslides and debris flows. The project site is located in an area of moderately steep slopes, some of which could be susceptible to seismically induced slope failure. Weak, unstable soils, currently undergoing downhill creep increase the hazards of seismically induced slope failure, especially during times of heavy rainfall.

REGULATORY SETTING

Federal

Federal Earthquake Hazards Reduction Act

In 1997, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes through the establishment and maintenance of an effective earthquake hazards and reduction program. To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). The agencies responsible for coordinating NEHRP are the Federal Emergency Management Agency (FEMA), the National Institute of Standards and Technology (NIST), the National Science Foundation (NSF); and the United States Geological Survey (USGS). In 1990 NEHRP was amended by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of the agency responsibilities, program goals, and objectives. The four goals of the NEHRP are as follows:

- Develop effective practices and policies for earthquake loss-reduction and accelerate their implementation,
- Improve techniques to reduce seismic vulnerability of facilities and systems,

- Improve seismic hazards identification and risk-assessment methods and their use, and
- Improve the understanding of earthquakes and their effects.

Pre-Disaster Hazard Mitigation Program

The Pre-Disaster Hazard Mitigation Program was authorized by the Robert T. Stafford Disaster Assistance and Emergency Relief Act. Funding for the program is provided through the National Pre-Disaster Mitigation Fund to assist state and local governments in implementing cost-effective hazard mitigation activities that complement a comprehensive mitigation program. 44 Code of Federal Regulations (CFR) part 201, Hazard Mitigation Planning, establishes criteria for state and local hazard mitigation planning authorized by the Stafford Act. After November 1, 2003, local and tribal governments applying for PDM funds through the state will have to have an approved local hazard mitigation plan prior to the approval of local hazard mitigation project grants. The County of Lake's Natural Hazards Mitigation Plan, prepared February 2005, fulfills this requirement.

State

Alquist-Priolo Earthquake Fault Zoning Act

Alquist-Priolo Earthquake Fault Zoning Act is the State law that focuses on hazards from earthquake fault zones. The purpose of this law is to mitigate the hazard of surface fault rupture by regulating structures designated for human occupancy near active faults. As required by the Act, the California Geological Survey has delineated Earthquake Fault Zones along known active faults in California.

California Uniform Building Code

The California Code of Regulations (CCR), also known as Title 24, California Building Standards Codes contain the laws regarding the construction of buildings. Title 24, Part 2 of the California Uniform Building Code (UBC) specifies standards for geologic and seismic hazards, other than surface faulting. Chapter 23 of the California UBC addresses seismic safety, and includes regulations for earthquake-resistant design and construction.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was enacted in 1997 to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to map areas subject to seismic hazards. A geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design before a development permits will be granted. Additionally, the Act requires a Standardized Natural Hazards Disclosure Statement form be completed by real estate sellers if a property is within one of the designated natural hazards areas.

Regional and Local

County of Lake General Plan

The 1981 County of Lake General Plan is in the process of being updated, and the 2006 Draft General Plan is anticipated to be adopted in 2008.

Lakeport Area Plan

The Lakeport Area Plan, adopted in 2000, covers approximately 72 square miles, and includes the greater Lakeport area and Scotts Valley.

The proposed project is analyzed for consistency with policies from both the County of Lake 1981 General Plan and 2006 Draft General Plan, as well as the Lakeport Area Plan as they pertain to each relevant section of the DEIR. Policies related to geology and soils are analyzed at the end of this section in Tables IV.G-4 (1981 General Plan), IV.G-5 (2006 Draft General Plan), and IV.G-6 (2000 Lakeport Area Plan).

ENVIRONMENTAL IMPACTS

Thresholds of Significance

Based on Appendix G to the *CEQA Guidelines* and the Regulatory Setting requirements, the proposed project could have a significant environmental impact if it would:

Geology and Soils

(a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

  (i) 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 (as shown in Table IV.G-1).

  (ii) Strong seismic ground shaking.

  (iii) Seismic-related ground failure, including liquefaction.

  (iv) Landslides.

(b) Result in substantial soil erosion or the loss of topsoil.

(c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

(d) Be located on expansive soil, as defined in Table 18-1-B of the California Building Code (2001), creating substantial risks to life or property.

(e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

(f) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving volcanic hazards; or

(g) 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 related to geology and soils.

As presented in Section IV.A, Impacts Found To Be Less Than Significant, of this DEIR and in the Initial Study, included as Appendix A of this DEIR, there would be no impacts associated with State *CEQA Guidelines* ~~for Geology/Soils~~ Thresholds (a)(i) and (e) above since the proposed project is not located within an active fault zone and does not include the use of septic tanks or alternative wastewater disposal systems, and are therefore not included in the impact analysis below. Therefore, Thresholds (a)(ii) through (~~f~~d) and (f) will be addressed in the impact analysis below. In addition, *CEQA Guidelines* 15125(d) states, "The EIR shall discuss any inconsistencies between the proposed project and applicable general plans and regional plans." Therefore, Threshold (g) above will also be addressed in the impact analysis below.

Mineral Resources

(a) Cause the loss of availability of a known Mineral Resources important to the State of California or the local economy ; or

(b) Cause the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Additionally with respect to Mineral Resources Threshold (a) and (b), there are no State-designated (MRZ-2) mineral resources located at the project site and the Lake County Aggregate Resource Management Plan does not identify a source of minerals at this site. Accordingly, the following discussion focuses on Geology/Soils Thresholds (a) through (~~e~~g).

Project Impacts and Mitigation Measures

Impact GEO-1: The proposed project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking and seismic-related ground failure, including liquefaction and seismic induced ground shaking

There is a high probability that the project site will be subjected to violent ground shaking from an earthquake during the life of the development. Soils and bedrock made of clean, loose, saturated, uniformly-graded sands or silts are most susceptible to liquefaction. The site is underlain by Franciscan bedrock. As discussed previously, the Franciscan Complex bedrock underlying the site has a very low susceptibility to liquefaction. Therefore, impacts related to liquefaction would be ***less than significant*** and no mitigation measures are required.

The California Geological Survey Probabilistic Hazards Assessment predicts peak ground acceleration at the site of 0.33g for firm rock and .377g for alluvium, with a 10 percent chance of exceeding that value in 50 years. This acceleration would sufficiently shake structures proposed by the project to cause damage to unprotected or poorly designed structures. Impacts to the project from seismically induced ground shaking are therefore considered ***potentially significant***.

Implementation of the following mitigation measure would reduce this impact to ***less than significant***.

Mitigation Measure GEO-1

The California Building Code and the Uniform Building Code have established guidelines for seismic structural analysis for sites located near active seismic sources. The project shall be designed in conformance with current applicable residential standards for seismic stability as presented in the *California Building Code Volumes 1 and 2, 2007 Edition*, including the California Building Standards, published by the International Conference of Building Officials, and as modified by the amendments, additions, and deletions adopted by the County of Lake, California. Effective January 1, 2008, the County of Lake has adopted the 2007 California Building Code, based upon the 2006 International Building Code. Incorporation of seismic construction standards would reduce the potential for catastrophic effects of ground shaking, such as complete structural failure, but will not completely eliminate the hazard of seismically induced ground shaking. The engineering design of structures shall incorporate seismic parameters, as outlined in the preliminary geotechnical engineering report and from the California Building Code as summarized in Table IV.G-3.

Table IV.G-3
Seismic Parameters

Seismic Parameters	
Seismic Zone	4
Soil Profile Type	Range from S_C to S_A due to varying nature of Franciscan Complex
Seismic Source Type	A
Seismic Zone Factor	0.40
Near Source Acceleration Factor, Na	1.0
Near Source Velocity Factor, Nv	1.0
Seismic Acceleration Coefficient, Ca	0.32-0.40*
Seismic Velocity Coefficient, Cv	0.32-0.56*

**Ranges are given due to the variety of soil and bedrock profiles across the project site.*
Source: Las Fuentes Project Geotechnical Report, Cleary Consultants, 1994.

Impact GEO-2: The proposed project would result in soil erosion and loss of topsoil

During construction, site-grading activities would remove vegetative cover from, disturb and expose soil that could become mobilized by storm waters during construction activities. According to the Soil Survey for the County of Lake, surface soils at the site are sandy and clayey loams that are subject to severe erosion. Unprotected sandy soils would erode, including the formation of rills and gullies during heavy seasonal rainstorms. The runoff from unprotected soil areas could include significant sediment

loading that could cause increased turbidity and sedimentation in downstream receiving channels. Therefore, impacts related to soil erosion and loss of topsoil would be ***potentially significant***.

Implementation of the following mitigation measure would reduce this impact to ***less than significant***.

Mitigation Measure GEO-2

The project shall comply with current Central Valley Regional Water Quality Control Board guidelines and shall adopt acceptable best management practices (BMPs) for control of sediment and stabilization of erosion on the subject site. The project shall also adopt acceptable BMPs for the protection of Water Quality. Development of the project site would be dependant upon approval of an Erosion Control Plan and a Stormwater Pollution Prevention Plan as outlined below.

Erosion Control Plan

An erosion control plan shall be prepared and implemented for the project. The plan shall be submitted to the County of Lake in conjunction with the project grading plan prior to issuance of a grading permit.

The plan shall include locations and specifications of recommended soil stabilization techniques, such as placement of straw wattles, silt fence, berms, and storm drain inlet protection. The plan shall also depict staging and mobilization areas with access routes to and from the site for heavy equipment. The plan shall include temporary measures to be implemented during construction, as well as permanent measures.

County staff and or representatives shall visit the site during grading and construction to ensure compliance with the grading ordinance and plans, as well as note any violations, which shall be corrected immediately. A final inspection shall be completed prior to occupancy. Elements of this plan may be incorporated into the Stormwater Pollution Prevention Plan (SWPPP), where applicable.

Stormwater Pollution Prevention Plan

In accordance with the Clean Water Act and the State Water Resources Control Board (SWRCB), the permittee shall file a Stormwater Pollution Protection Plan (SWPPP) prior to the start of construction. The SWPPP shall include specific best management practices to reduce soil erosion. This is required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 99-08-DWQ).

Impact GEO-3: The proposed project would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse

The project site is located in an area that includes moderate to steep slopes with numerous mapped landslide deposits. The re-activation of existing landslides or the creation of new slope instabilities may occur due to construction activities. Potential problems with cut slopes include failure and erosion. These are more likely when slope inclinations are too steep for the strength of the underlying material and/or when structure orientation is adverse (i.e. dip of structure is shallower than slope inclination and

dip is out of slope, and when surface drainage is poor). Intensely sheared Franciscan mélange matrix may be relatively weak and subject to erosion and slope instability when exposed to weathering. Slope failure is also a potential hazard to workers at the construction site. Therefore, impacts related to slope instability would be ***potentially significant***.

Due to the sloping nature of the project site, it is anticipated that cuts and fills would be required to construct the project. Deep fills may become unstable geologic units susceptible to densification and differential settlement, which could adversely affect foundations or underground utilities. Additionally, areas of the Franciscan formation include mélange shale that may become unstable if cuts are made too steeply. Therefore, impacts related to unstable geologic units would be ***potentially significant***.

Implementation of the following mitigation measures would reduce this impact to ***less than significant***.

Mitigation Measure GEO-3a

A geotechnical investigation for a portion of this site was completed in 1984; therefore, an updated geotechnical investigation, performed by a geotechnical engineer or civil engineer with geotechnical experience shall be performed for the entire site. This updated investigation shall more thoroughly characterize the geology of the site in order to facilitate design of mitigation measures.

The following geotechnical mitigations related to steep slopes on the site are recommendations by Cleary Consultants and are likely to be consistent with updated recommendations provided by the Geotechnical Engineer of Record.

- Non-reinforced fill and cut slopes shall be constructed as proposed by the project geotechnical engineer at a gradient of 2H:1V or flatter. Fill slopes to be constructed at an inclination steeper than 2H:1V shall be constructed following reinforced earth geotechnical criteria as proposed by the project geotechnical engineer. Reinforced earth construction for stabilization of slopes to be constructed at an inclination steeper than 2H:1V may include replacing the weak upper portion of the natural slope with reinforced earth or the installation of drilled pier and grade beam structure.

- Horizontal benches shall be constructed on all constructed slopes at intervals of 25 to 30 feet.

- New fill shall be compacted to a minimum relative compaction of 90% of the maximum dry density (as determined in accordance with ASTM D1557 test method).

- In areas underlain by landslide deposits, over-excavation of the landslide mass and placement of engineered fill and subsurface drainage shall be performed. Engineered fill shall be compacted to a minimum relative compaction of 90% of the maximum dry density (as determined in accordance with ASTM D1557 test method), under the direction of the project geotechnical engineer.

- Reinforced soil gravity walls, cantilevered retaining walls, sheetpiles, anchored retaining walls, or soil-strengthened systems such as gabion walls or mechanically stabilized earth shall be used to

stabilize final cut and fill slopes at the discretion of, and under the direction of the project geotechnical engineer.

Mitigation Measure GEO-3b

The following geotechnical mitigations related to unstable geologic units on the site shall be conducted.

- An updated geotechnical investigation shall be performed for the entire site.
- Fills used at the project site shall be properly keyed into bedrock.
- Homogenous fill shall employ subsurface drains to relieve pore pressure, and fill shall be compacted to a minimum of 90% of the maximum dry density.
- Construction of foundations shall be delayed through the first winter after completion of rough grading to allow any initial settlements to occur.
- Underground utilities shall be designed and constructed using flexible connection points to allow for differential settlement.
- Foundation plans shall be submitted to the County of Lake Community Development Department, Department of Building and Safety, located at 255 North Forbes Street, Lakeport, California, for review prior to issuance of a building permit. All foundation excavations shall be inspected by the project geotechnical engineer to insure that subsurface conditions encountered are as anticipated. As-built documentation must also be submitted to the County of Lake Community Development Department.
- The applicant shall also implement all of the measures included in Mitigation Measure GEO-2 (Slope Instability).

Impact GEO-4: The proposed project would be located on expansive soils creating substantial risks to life or properly

Expansive soils and bedrock shrink and swell in response to changes in moisture content such as occur seasonally and can cause damage to foundations, pavements and underground utilities. Much of the site overlies serpentine bedrock, which is associated with expansive soils, due to the presence of high concentrations of magnesium. Soils are described in the USDA Natural Resources Conservation Service Soil Survey as having a high shrink-swell potential, and the preliminary geotechnical report by Cleary Consultants confirmed the existence of highly expansive soils. Therefore, impacts related to expansive soils would be ***potentially significant***.

Implementation of the following mitigation measure would reduce this impact to ***less than significant***.

Mitigation Measure GEO-4

The following mitigation measures shall be used to mitigate the impacts of expansive soils and bedrock. The specific mitigation measures shall be designed by the project geotechnical engineer of record and shall be implemented under his/her direction. Mitigation measures may include the following:

- Within building areas expansive soils shall be excavated and replaced with non-expansive, select fill.
- Lime treatment shall be used to reduce expansion potential of soils to an acceptable level.
- Drilled pier and grade beam foundations with raised floors shall be used.
- Thickened concrete slabs resistant to uplift pressures and settlement shall be used.
- Utilize pre-stressed concrete slabs.

Impact GEO-5: The proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving volcanic hazards

The project site is located near the Clear Lake volcanic field, a location of early Holocene lava domes, cinder cones and maars. It also includes the actively producing Geysers geothermal field. Volcanism in the Clear Lake volcanic field is considered dormant. While future eruptive events cannot be completely ruled out, an eruption during the design life of the proposed project is considered highly unlikely. Therefore, impacts related to volcanic hazards would be ***less than significant*** and no mitigation measures are required.

Impact GEO-6: The proposed project would not 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 related to geology and soils

CEQA Guidelines 15125(d) states: "*The EIR shall discuss any inconsistencies between the proposed project and applicable general plans and regional plans*." An EIR uses the policy analysis as an indicator of the resources that might be affected by a project. Inconsistency with a policy may indicate a significant physical impact, but the inconsistency is not itself an impact. The determination that the proposed project is consistent or inconsistent with the General and Area Plan policies is ultimately the decision of the County of Lake. Because the General Plan update has not been adopted and is an ongoing process, the standards for analysis used in this DEIR is based on both the 1981 General Plan and the 2006 Draft General Plan. Additionally, the project site is governed by policies included in the Lakeport Area Plan; therefore, consistency with these policies will be included in this analysis. Policies related to geology and soils are analyzed at the end of this section in Tables IV.G-4 (1981 General Plan), IV.G-5 (2006 Draft General Plan), and IV.G-6 (2000 Lakeport Area Plan). The project is generally consistent with the applicable policies related to geology and soils. Therefore, impacts related to a conflict between

the project and any applicable land use plan, policy, or regulation related to geology and soils would be ***less than significant*** and no mitigation measures are required.

CUMULATIVE IMPACTS

Geotechnical impacts related to future development in the County would involve geologic hazards associated with site-specific soil conditions, erosion, and ground-shaking during earthquakes. The impacts on each site would be specific to that site and its users and would not be common or contribute to (or shared with, in an additive sense) the impacts on other sites. In addition, development on each site would be subject to uniform site development and construction standards that are designed to protect public safety. Therefore, the proposed project's contribution to significant cumulative impacts related geology and soils would be ***less than significant***.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of the development standards included as part of the proposed project and the mitigation measures listed above and compliance with applicable regulations, project impacts related to geology and soils would be reduced to ***less than significant***. Additionally, cumulative impacts related to geology and soils would be ***less than significant***.

Table IV.G-4
1981 General Plan Policy Analysis

Policy	Analysis
Geologic and Seismic Hazards	
1.1: There exists a direct relationship between the degree of slope and the associated hazards on any given soil and geologic situation. In Lake County soils and geology are complex, making for a wide variety of conditions when building. In order to avoid hazards to human life and property, areas in excess of 30 percent slope shall have engineered plans for all construction and grading. These plans shall address roads, utility corridors, etc. as well as, off-site problems, such as erosion caused by construction.	**Consistent.** Portions of the project site exceed slopes of 30 percent and slope instability has been called out as a potentially significant impact. Mitigation Measures GEO-3a and 3b state the need for an updated geotechnical investigation to be performed for the entire site. Additional mitigation measures require appropriate documentation, which shall be provided before permits will be issued.
1.2: Development of lands identified as having high inherent swelling capacity and severe load limitations should be allowed only after site specific soil analysis have been performed which indicate the soils can adequately support the structure.	**Consistent.** Portions of the project site have been identified as having expansive soils which have high inherent swelling capacity. Mitigation Measure GEO-4 cites that a project geotechnical engineer of record shall design mitigation measures for expansive soils impacts and implement them under his/her direction.
1.3: The siting of residential, commercial, recreational, or industrial structures on or adjacent to known or potentially active fault zones should be avoided. Development on lands having soils sensitive to seismic activity should be permitted only after adequate site analysis and appropriate siting and design of structure and foundation. In areas of known seismic hazards, building intensity should be dictated by a scale of acceptable risks as shown in Table V-7 of the General Plan.	**Consistent.** The site lies in an area of active seismicity and is close to areas of active surface fault rupture, the Maacama Fault Zone, the Big Valley Fault Zone, and the Konocti Bay Fault Zone. However, the project site is not located within an active fault zone. The project would include structures for commercial use, a hotel, and single family dwellings. As per Table V-7 in the General Plan, the acceptable risk level for the building intensity would be an "ordinary" level of risk to occupants of the structures.

Table IV.G-4
1981 General Plan Policy Analysis

Policy	Analysis
Geologic and Seismic Hazards	
1.4: Development should not occur on existing unconsolidated landslide debris	**Consistent.** The project site contains landslide deposits and has potential for landslides to occur. Mitigation Measures GEO-3a and 3b require that an updated geotechnical investigation be performed by a geotechnical engineer or civil engineer with geotechnical experience and shall be performed for the entire site to ensure that development will not occur in hazardous area.
2.5: All buildings for human habitation should be designed to compensate for seismic hazards and to meet the Uniform Building Code and other requirements based on risk, type of occupancy, and location.	**Consistent.** The project would include buildings intended for human habitation. The project shall be designed in conformance with current applicable residential standards for seismic stability as presented in the California Building Code Volumes 1 and 2, 2007 Edition. Incorporation of seismic construction standards would reduce the potential for catastrophic effects of ground shaking, such as complete structural failure, but will not completely eliminate the hazard of seismically induced ground shaking.

Table IV.G-5
2006 Draft General Plan Policy Analysis

Policy	Analysis
Health and Safety	
HS-1.1: Development Constraints. The County shall permit development only in areas where the potential danger to the health and safety of people can be mitigated to an acceptable level.	**Consistent with draft policy.** Mitigation measures included in this DEIR section would ensure that potentially significant impacts relative to geology and soils, which could present potential danger to the health and safety of people at the project site, would be mitigated to a less-than-significant level.
HS-1.3: Building and Fire Codes. The County shall ensure all buildings for human habitation are designed in compliance with the Uniform Building Code and other requirements based on risk (e.g., seismic hazards, flooding), type of occupancy, and location (e.g., floodplain, fault).	**Consistent with draft policy.** The project shall be designed in conformance with current applicable residential standards for seismic stability as presented in the California Building Code Volumes 1 and 2, 2007 Edition, including the California Building Standards, 2007 Edition, published by the International Conference of Building Officials, and as modified by the amendments, additions, and deletions adopted by the County of Lake, California.

Table IV.G-5
2006 Draft General Plan Policy Analysis

Policy	Analysis
Health and Safety	
HS-2.1: Hillside Development. Areas in excess of 30 percent slope may require submittal of engineered plans for all construction and grading, at the discretion of the Community Development Department. These plans shall address roads, utility corridors, and similar off-site improvements as well as erosion control.	**Consistent with draft policy.** Portions of the project site exceed slopes of 30 percent and slope instability has been called out as a potentially significant impact. Mitigation Measures GEO-3a and 3b state the need for an updated geotechnical investigation to be performed for the entire site. Additional mitigation measures require appropriate documentation be provided before permits will be issued.
HS-2.2: Development Near Fault Zones. The siting of residential, commercial, recreational, or industrial structures on or adjacent to known active or potentially active fault zones should be avoided. In areas of known seismic hazards, building intensity should be dictated by a scale of acceptable risks.	**Consistent with draft policy.** The site lies in an area of active seismicity and is close to areas of active surface fault rupture, the Maacama Fault Zone, the Big Valley Fault Zone, and the Konocti Bay Fault Zone. However, the project site is not located within an active fault zone. The project would include structures for commercial use, a hotel, and single family dwellings. As per Table V-7 in the General Plan, the acceptable risk level for the building intensity would be *An "ordinary" level of risk to occupants of the structures*.
HS-2.3: Landslide Areas. The County shall not allow development on existing unconsolidated landslide debris.	**Inconsistent with draft policy.** The project site contains landslide deposits and has potential for landslides to occur. Mitigation Measures GEO-3a and 3b require that an updated geotechnical investigation be performed by a geotechnical engineer or civil engineer with geotechnical experience and shall be performed for the entire site. This updated investigation will more thoroughly characterize the geology of the site in order to facilitate design of mitigation measures for landslides.

Table IV.G-6
2000 Lakeport Area Plan Policy Analysis

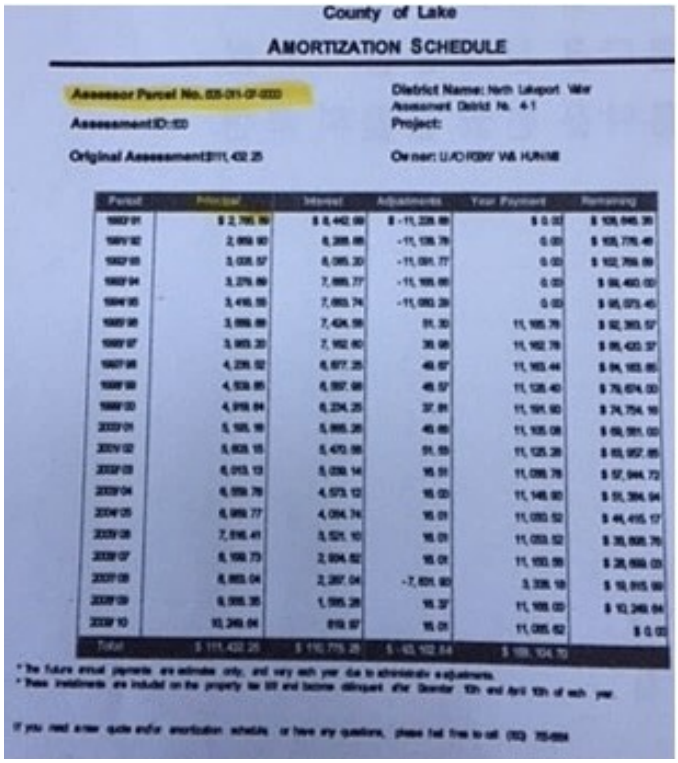
Policy	Analysis
Natural Resources	
3.1.1.a: Employ appropriate erosion control measures during and after construction of new subdivisions, roads, and other activities involving movement of earth.	**Consistent.** Mitigation GEO-5 requires that an erosion control plan shall be prepared and implemented for the project. The plan shall be submitted to Lake County in conjunction with the project Grading Plan prior to issuance of a Grading Permit.
3.1.1.b: Refer development proposals and divisions of land to the local resource conservation district for review and recommendation whenever soil erosion and conservation is a potential issue.	**Consistent.** The Department of Conservation was notified of the Notice of Preparation of the DEIR and responded with a letter of recommendation to ensure appropriate measures are taken before development occurs. (See Appendix B to this DEIR). The Department will also be notified of the availability of the DEIR for their review.

Table IV.G-6
2000 Lakeport Area Plan Policy Analysis

Policy	Analysis
3.1.1.c: Focus development in areas of low to moderate erosion potential.	**Inconsistent.** All soil types found at the project site are highly to severely susceptible to erosion. Mitigation Measure GEO-2 requires that an erosion control plan shall be prepared and implemented for the project. The plan shall be submitted to Lake County in conjunction with the project Grading Plan prior to issuance of a Grading Permit.
3.1.1.d: Conduct site specific soil analysis of lands identified as having shrink-swell characteristics with potential load limits before development is allowed to determine which soils can adequately support structures and that foundations are designed to withstand expansive soils.	**Consistent.** Mitigation Measure GEO-2 requires that an updated geotechnical investigation will be performed by a geotechnical engineer or civil engineer with geotechnical experience and shall be performed for the entire site.
Public Safety	
4.1.1.a: Discourage development in landslide areas and areas of unstable slopes as designated by the State Department of Mines and Geology (DMG), the United State Geological Survey (USGS), or other areas identified from geological research. Development in areas where slopes average 30% or more should be prohibited.	**Inconsistent.** The project site contains landslide deposits and has potential for landslides to occur. Mitigation Measures GEO-3a and 3b require that an updated geotechnical investigation be performed by a geotechnical engineer or civil engineer with geotechnical experience and shall be performed for the entire site. Portions of the project site exceed slopes of 30 percent and slope instability has been called out as a potentially significant impact. Mitigation Measure GEO-3a and 3b sites the need for updated geotechnical investigation, to be performed for the entire site. Additional mitigation measures require appropriate documentation be provided before permits will be issued.
4.1.1.c: Avoid approving development in areas most sensitive to landslides and seismic activity. Geotechnical studies prepared by engineering geologists or other qualified professionals shall be required for development projects in areas determined to have an existing or potential landslide or seismic problems.	**Consistent.** The project site contains landslide deposits and has potential for landslides to occur. Mitigation Measures GEO-3a and 3b require that an updated geotechnical investigation be performed by a geotechnical engineer or civil engineer with geotechnical experience and shall be performed for the entire site. The project site lies in an area of active seismicity. However, the project site is not located within an active fault zone.
4.1.1.e: Require revegetation for slope stabilization of development projects when necessary to prevent landslides.	**Consistent.** The project site contains landslide deposits and has potential for landslides to occur. Mitigation Measures GEO-3a and 3b require that an updated geotechnical investigation be performed by a geotechnical engineer or civil engineer with geotechnical experience and shall be performed for the entire site.

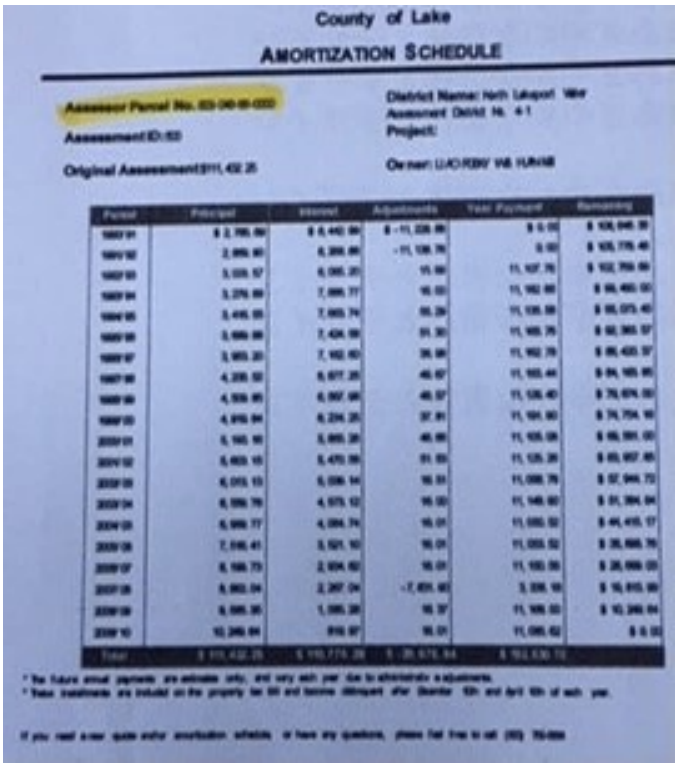
Existing pasture land

Water Extension Fees



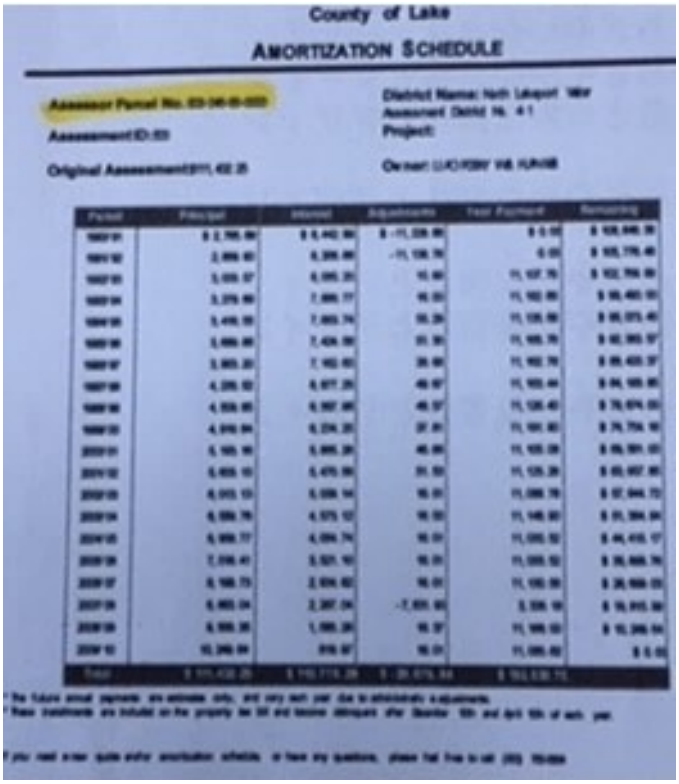
County of Lake

AMORTIZATION SCHEDULE



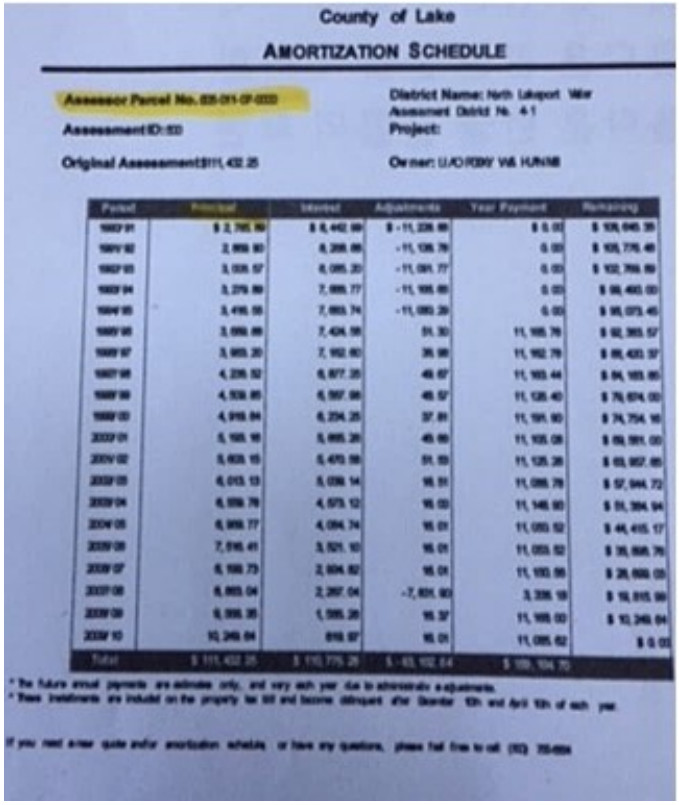
County of Lake

AMORTIZATION SCHEDULE



County of Lake

AMORTIZATION SCHEDULE



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AMORTIZATION SCHEDULE