IV. ENVIRONMENTAL IMPACT ANALYSIS
D. GEOTECHNICAL HAZARDS

The following section of the Draft EIR summarizes the findings and conclusions presented in the Fault Rupture Hazard Investigation for the Proposed Hillcrest Christian School Expansion Project, Hillcrest Christian School, Lots 1 & 2, Tract 10422 Northwest Corner of Rinaldi Street and Shoshone Avenue Granada Hills California, prepared by GeoSystems dated September 29, 2000. The entire Fault Rupture Hazard Investigation report is included in Appendix D of this Draft EIR.

ENVIRONMENTAL SETTING

The East Campus is comprised of an approximate 4-acre, L-shaped parcel situated at the northeast corner of Rinaldi Street and Shoshone Avenue. The site is relatively level with a gentle slope descending from the north. Elevations on East Campus site range from approximately 1134 feet at the northernmost portion of the site along Shoshone, to approximately 1108 feet at the easternmost area adjacent Rinaldi Street. The residences adjacent the site to the northeast are buffered by a landscaped hillside and are situated above the campus at an approximate elevation of 1170. The East Campus is developed with approximately 60,000 square feet of school and church buildings and two asphalt paved surface parking lots. The northernmost area of the site along Shoshone is reserved as a open space grass covered play yard for school purposes.

The 5.5. acre West Campus property is situated at the northwest corner of Rinaldi Street and Shoshone Avenue. Topographically the West Campus is situated on a gently sloping foothill of the Santa Susana Mountains. The western limits of the property are roughly defined by an unpaved trail that is the southern extension of Ridgeway Road. Elevations on the site range from approximately 1180 feet at its highest point along the most northwestern portion of the site adjacent Ridgeway Road to approximately 1120 feet at its lowest point nearest the corner of Rinaldi Street and Shoshone Avenue.

The West Campus property is currently developed with three residential homes with ancillary wood frame structures which are generally situated along Shoshone Avenue and Rinaldi Street. A majority of the site behind the residential structure to the west remains undeveloped. Vegetation consists of sporadic ground cover, weeds and several mature trees. A minor amount of loose artificial fill blankets the ground surface in the level portions of the property, which was likely generated during the abandonment of the orchards and out-buildings, which occupied the site from the 1940's to at least 1962.

The West Campus site is mantled with residual soil and a thin veneer of artificial fill overlying bedrock. Gently inclined bedrock slopes are present in the immediate vicinity west and north of the property.

The site consists mostly of natural level terrain, with an exception of a strip of certified compacted fill that was placed in the southwest portion at the time of the removal of an abandoned underground water conduit in 1992. Prior to the placement of this compacted fill, a 9-foot-wide by 6-foot-high concrete water conduit traversed southwestward from the northeast property corner. A permanent bulkhead was constructed along the northeast extent of the excavation prior to placement of the compacted fill. A portion of the abandoned water conduit remains underground in the northeast corner of the property, and will be removed during development of the site.

Earth Materials

The earth material encountered in the fault trenches and test pits on the West Campus site consists of minor amounts of artificial fill, residual soil and bedrock. General descriptions of the earth materials are provided below. The earth units mapped for the West Campus site are depicted in Figure IV.D-1 on page 113.

Artificial Fill (Af)

Artificial fill consists of medium to dark brown sandy gravel, gravelly sand and silty sand locally mantles the property and is present as certified compacted fill in the area of the abandoned water conduit. The fill is generally moderately dense to dense where compacted and dry to damp. Abundant pebbles and cobbles with minor amounts of construction debris and concrete fragments are found in the fill. The fill in the northern portion of the property appears to have been generated during the grading of Ridgeway Road, where it was cast over the slope. The non-compacted artificial fill was found to have a maximum thickness of about 3-feet. The certified compacted fill has a maximum thickness of about 16-feet. Artificial fill at the site is not considered suitable for structural support in its current condition.

Residual Soil

Residual soil mantles the bedrock on the slopes and in the western portion of the property. The soil consists of medium brown to medium reddish brown pebbly silty clay to pebbly silty sand. The soil is dry to damp and moderately dense to very dense. Varying amounts of pebbles and small cobbles are found in the soil. The maximum observed thickness of the soil was approximately 11-feet. The contact between the soil and underlying bedrock is typically gradational.

Figure IV.D-1 Geotechnical Map – West Campus

Bedrock: Saugus Formation (TQs)

Bedrock at the site consists of interbedded mudstone/claystone, siltstone, sandstone, and conglomerate assigned to the Sunshine Ranch Member of the Saugus Formation and is believed to be upper Pleistocene in geologic age. In general, the mudstone/claystone and siltstone beds are firm, while the sandstone and conglomerate vary from poorly cemented and friable to well cemented and hard. Bedding in the coarser-grained units is generally well developed in planar beds varying in thickness from a few inches to several feet, while the mudstone/claystone is typically thickly bedded with gradational bedding contacts. The bedrock is considered highly suitable for foundation support of the proposed structures.

Landslides

Ancient or recent landslides were not observed on the property, nor was any evidence of landsliding apparent on the reviewed aerial photographs. In addition, examination of slopes on the property did not reveal the presence of past surficial slope failures.

Groundwater

No groundwater seepage was observed on the site or in exploratory excavations and borings by Kovacs-Byer and Associates, Inc., (1992) and GeoSoils, Inc., (1997), the deepest of which was 51.5-feet. The groundwater level is anticipated to be substantially below the level of the proposed development.

Faulting and Seismicity

The entire southern California area is considered a seismically active region. Faults are categorized as active, potentially active and inactive. A fault is classified as active if it has shown evidence of movement during the last 11,000 years (e.g., Holocene geologic age) or is included in an Alquist-Priolo Earthquake Fault Zone (as established by the California Division of Mines and Geology). Faults are considered potentially active if they have experienced movement within the past 1.6 million years (e.g., Quaternary geologic age). Faults that have not experienced movement within the 1.6 million years are generally considered inactive. A regional fault map depicting faults in proximity to the project site is shown in Figure IV.D-2 on page 115.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1973 (Public Resources Code Section 2621 et seq.) represents the current State mandated approach to controlling development in active fault zones. Essentially, there are two general requirements of the APSSZ Act; (1) it prohibits the location of most

Figure IV.D-2 Regional Fault Location Map

structures for "human occupancy" across the trace of active faults; and (2) it establishes special study zones requiring geologic/seismic reports of all proposed developments within 1,000 feet of the zones. The project site is not located within a state-defined Alquist-Priolo Earthquake Fault Zone.

With reference to the Alquist-Priolo Earthquake Fault Zoning Act, Title 14 of the California Code of Regulations provides policies and criteria of the State Mining and Geology Board for governing the exercise of city, county, and state agency responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults. Specifically, Section 3603(a) of Title 14, Article 3 of the California Code of Regulations states that the following criteria shall apply within earthquake fault zones and shall be used by affected lead agencies in complying with the provisions of the Act:

> *"No structure for human occupancy, identified as a project under Section 2621.6 of the Act, shall be permitted to be placed across the trace of an active fault. Furthermore, as the area within 50 (50) feet of such active faults shall be presumed to be underlain by active branches of that fault unless proven otherwise by an appropriate geologic investigation and report prepared as specified in Section 3603(d) of this subchapter, no such structures shall be permitted in this area."*

Private Schools Building Safety Act of 1986

The Private Schools Building Safety Act of 1986 (i.e., California Education Code Section 17320-17336) provides that children attending private schools be afforded life safety protection similar to that of children attending public schools by having all of the following:

a) Private school structures designed and constructed in a manner that minimizes fire hazards and resists the forces generated by earthquakes, gravity, and winds to the extent necessary to ensure the safety of occupants.

b) The structural systems and details set forth in working drawings and specifications carefully reviewed by responsible enforcement agencies using qualified personnel, and the construction process carefully inspected.

c) Procedures for the design and construction of private school structures to be subjected to qualified design review and construction inspection.

d) Nonstructural components, including, but not limited to, ceiling systems, electrical equipment, and mechanical equipment given adequate consideration during the design and construction process to assure that they will not detract from occupant safety in the event of an earthquake.

City of Los Angeles General Plan Seismic Safety Element

For planning purposes, the City of Los Angeles General Plan Seismic Safety Element designates approximately one-eighth mile wide Fault Rupture Study Zones on each side of identified active and potentially active faults to establish areas of particularly acute seismic hazard potential. The proposed project site is not located with in a designated Alquist-Priolo Special Study Zone area. However, the project site is located within the broader Fault Rupture Study area designation.[1] The Seismic Safety Plan Element requires "comprehensive geologic-seismic design-foundation engineering investigations" to be submitted for any of the following uses in Fault Rupture Study Zone areas: "schools, churches, theatres, large hotels, and other high rise buildings housing large numbers of people, other places normally attracting large concentrations of people, civic buildings, secondary utility structures, extremely large commercial enterprises, most roads, alternative or non-critical bridges and overpasses". Accordingly, a geological fault rupture hazard investigation was performed for the proposed West Campus Site to determine whether or not an active fault exists beneath or adjacent to the location of the proposed secondary school building.

The project site is not underlain by any known active fault. The closest known major active fault, the Santa Susana fault zone, lies approximately 1½ -miles north of the site. The Mission Hills fault, is inferred by Dibblee (1992) to be trending east-west along the southern limits of the subject property. The Mission Hills fault is classified as a potentially active fault.[2] The exact location of this fault, however, was not verified at that time due to the lack of any traceable surface features.[3] As discussed in greater detail below, the findings of the geotechnical fault hazard investigation concluded the fault features underlying the West Campus site reveal no active movement (i.e., geologic activity within the last 11,000 years). As such, the findings of that investigation determined that the project site is not located on an active fault or fault zone.

---

1 *City of Los Angeles Environmental and Public Facilities Maps, Map No. 33 Alquist-Priolo Special Study Area, 1996.*

2 *Southern California Earthquake Center (SCEC) internet page at http://www.scecdc.scec.org/mission.html, January 2000.*

3 *Soils and Engineering-Geologic Feasibility Analysis of Proposed West Campus Hillcrest Christian School , GeoSystems, November 19, 1998.*

Field Investigation

Faulting.

The Fault Rupture Hazard Investigation for the proposed project was performed by Geosystems.[4] The Fault Rupture Hazard investigation consisted of reviewing pertinent geologic maps, reviewing aerial photographs dating from the early 1920's, and the excavation and detailed geologic logging of fault trenches in the area of the proposed building. Test pits were also excavated on the slopes in the northern portion of the development area in order to obtain representative samples of the on-site earth materials for laboratory testing and analyses. The locations of fault trenches T-1 through T-4 are identified the cross sections depicted in Figure IV.D-1 on page 113. The cross sectional log of Trenches T-1 and T-2 are depicted in Figure IV.D-3 on page 120 and Trenches T-3 and T-4 are depicted in Figure IV.D-4 on page 121.

As shown in Figure IV.D-3 on page 120, several generally east west to northwest-trending faults with variable north and south dips were encountered in trenches T-1 and T-2. The faults had measurable separation on the order of a few inches to about 18-inches. Because these trenches were located in an area void of datable natural residual soil, a determination as to the recency of faulting could not be made based on these trenches alone. Therefore, fault trenches T-3 and T-4 were excavated in the western portion of the property where a thick residual soil layer was present in an effort to determine if the faults offset the soil layer. No faulting was observed in trenches T-3 and T-4, which indicates the faults observed in T-1 and T-2 do not represent through-going features associated with the Mission Hills fault zone. Geosystems concluded that the faults appear to be the result of tectonic activity associated with the regional uplifting of the Santa Susana Mountains, and are not indicative of currently active faulting.

Seismicity

Two moderate earthquakes have occurred in the site's vicinity in recent time. The epicenter of the magnitude 6.7 February 9, 1971 San Fernando earthquake was located approximately 15 miles northeast of the site. Surface rupture associated with this earthquake was extensive in the Sunland and San Fernando area. No surface ruptures were noted in the immediate vicinity of the subject site. The epicenter of the magnitude 6.7 January 17, 1994 Northridge Earthquake was located approximately 4 miles southwest of the site. Although no known surface rupture occurred on-site as a result of this

---

4 *Fault Rupture Hazard Investigation for the Proposed Hillcrest Christian School Expansion Project, Hillcrest Christian School, Lots 1 & 2, Tract 10422 Northwest Corner of Rinaldi Street and Shoshone Avenue Granada Hills California, GeoSystems, GS98-815-1, September 29, 2000.*

earthquake, apparent liquefaction of loose soils occurred just north of the inter-section of Rinaldi Street and Balboa Boulevard, approximately 1½ -miles east of the subject site, which resulted in ruptured utility lines.

The peak and repeatable ground accelerations at the subject site were calculated by Geosystems using EQFault software, version 2.20. The results of the entire database are presented in Appendix C of this Draft EIR. The deterministic site parameters for faults within a 100 mile radius of the project site are depicted in Table IV.D-1 on page 122. The database search identified a total of 59 faults with in a 100 mile radius of the project site. The closest fault to the project site is the Santa Susana Fault, approximately 1.2 miles away. The EQ Fault data concluded the site has a maximum-credible site acceleration of 0.836g and a maximum-probable site acceleration of 0.745g.

Liquefaction Potential

Liquefaction is a process by which sediments below the water table temporarily lose strength and behave as a viscous liquid rather than a solid. The types of sediments most susceptible are clay-free deposits of alluvial fine sand and silts. The project site is not located within an identified liquefaction hazard area as designated by the California Department of Conservation, Department of Mines and Geology, Official Map of Seismic Hazard Zones, Oak Mountain Quadrangle, dated February 2, 1998. Geosystems evaluation of liquefaction potential for the soils at the subject site was based on soil and bedrock type, water level, relative density, gradation, and intensity and duration of ground shaking. The bedrock which underlies the surficial materials at the site is dense and well compacted, and is not considered prone to liquefaction. Groundwater was not encountered to a depth of at least 50-feet in the exploratory borings at the site and the adjacent property. Groundwater level at the subject site appears to be substantially below the level proposed development. Due to the lack of materials considered to be prone to liquefaction and lack of shallow groundwater underlying the site, it is Geosystem's professional opinion that the liquefaction potential at the subject property is very low.

Figure IV.D-3 Cross Sectional Trench Logs - Trenches T-1 and T-2

Figure IV.D-4 Cross Sectional Trench Logs - Trenches T-3 and T-4

Table IV.D-1
Deterministic Site Parameters

Abbreviated Fault Name	Approx. Distance (miles)	Maximum Credible Event			Maximum Probable Event		
		Max. Credible Magnitude	Peak Site Acceleration (g)	Site Intensity MM	Max. Probable Magnitude	Peak Site Acceleration (g)	Site Intensity MM
Santa Susana	1	7.00	0.836	XI	6.00	0.745	XI
Northridge Hills	2	6.50	0.726	XI	5.00	0.243	IX
Sierra Madre-San Fernando	2	7.50	0.792	XI	6.00	0.691	XI
Verdugo	5	6.70	0.534	X	4.50	0.117	VII
San Gabriel	7	7.00	0.349	IX	5.75	0.158	VIII
Simi-Santa Rosa	8	7.00	0.381	X	5.25	0.122	VII
Holser	10	6.60	0.273	IX	5.75	0.154	VIII
Oak Ridge (Onshore)	14	7.20	0.237	IX	6.50	0.154	VIII
Santa Monica-Hollywood	16	7.50	0.242	IX	5.25	0.049	VI
Newport-Inglewood(offshore)	17	7.00	0.161	VIII	5.75	0.058	VI
San Cayetano	17	7.50	0.224	IX	6.25	0.099	VII
Elysian Park Seismic Zone	18	7.00	0.155	VIII	5.75	0.062	VI
Malibu Coast	18	7.50	0.215	VIII	6.50	0.113	VII
Raymond	20	7.50	0.188	VIII	4.00	0.013	III
Clearwater	21	7.00	0.125	VII	3.00	0.005	II
Whittier-North Elsinore	22	7.50	0.165	VIII	6.00	0.049	VI
Palos Verd-Coron.B.-A.Blan	23	7.50	0.156	VIII	6.75	0.087	VII
Anacapa	27	7.00	0.088	VII	5.00	0.018	IV
San Andreas (Mojave)	27	8.30	0.223	IX	8.00	0.185	VIII
Pine Mountain	28	7.00	0.084	VII	4.25	0.010	III
Santa Ynez (East)	30	7.50	0.111	VII	5.25	0.016	IV
Oak Ridge (Offshore)	36	7.20	0.067	VI	5.50	0.018	IV
Arroyo Parida - More Ranch	37	7.50	0.080	VII	5.25	0.014	III
Ventura - Pitas Point	38	7.20	0.061	VI	5.75	0.020	IV
Frazier Mountain	39	6.50	0.034	V	3.00	0.002	-
Cucamonga	41	7.00	0.046	VI	6.25	0.026	V
Garlock (West)	43	7.80	0.086	VII	6.50	0.028	V
Red Mountain	44	7.30	0.052	VI	5.25	0.010	III
Mid-Channel	45	7.50	0.058	VI	5.50	0.012	III
Big Pine	46	7.30	0.051	VI	5.50	0.010	III
Chino	46	7.00	0.039	V	5.50	0.012	III
Pleito	49	7.00	0.036	V	5.75	0.013	III
Catalina Escarpment	50	7.00	0.035	V	6.25	0.018	IV
Gln. Helen-Lytle Cr-Clremnt	51	7.00	0.035	V	6.50	0.022	IV
Ozena	55	7.00	0.029	V	4.75	0.005	II
Santa Cruz Island	56	7.40	0.039	V	4.75	0.005	II
White Wolf	57	7.80	0.051	VI	6.00	0.012	III
San Clemente - San Isidro	58	8.00	0.068	VI	6.50	0.018	IV
North Frontal Fault Zone	60	7.70	0.049	VI	5.75	0.009	III
San Andreas (S. Bern. Mtn.)	60	8.00	0.065	VI	6.75	0.022	IV

Source: Geosystems, September 29, 2000

ENVIRONMENTAL IMPACT

Thresholds of Significance

Based on the City of Los Angeles Draft CEQA Thresholds Guide, the proposed project would result in a significant geologic hazard impact if it would cause or accelerate geologic hazards which would result in substantial damage to structures or infrastructure, or expose people to substantial risk of injury. Additionally, a project would result in significant impact on landform alteration if one or more distinct and prominent geologic or topographic features would be destroyed, permanently covered or materially and adversely modified. Such features may include, but are not limited to, hilltops, ridges, hillslopes, canyons, ravines, rock outcrops, water bodies, streambeds and wetlands.

Project Impacts

The project is proposed to be constructed in a two phase process to allow for the temporary placement and operation of modular classroom trailers to accommodate the school's anticipated enrollment concurrent with the final phase construction period. The level of grading activities associated with each phase is discussed below.

Initial Phase

Grading activities during construction of the Initial Phase will require approximately 35,000 cubic yards (cy) of cut and 7,000 cy of fill.[5] Approximately 28,000 cu of soil will be exported from the site. Grading will be generally be localized to the areas identified on the Initial Phase Site Plan for the temporary school trailers, the Shoshone Avenue street widening dedication, and the proposed parking lot area. The existing structures on the site will be demolished and cleared away and the proposed building pad area will be fenced off to restrict public access during the construction period. The proposed parking lot area will be graded and compacted at an approximate surface elevation of 1125 feet. The area identified for the proposed temporary classroom trailers will be surface graded at an average surface elevation of 1140. Grading in this area will be concentrated towards Shoshone Avenue and will not include cuts and excavations into the slope above 1150 feet. The abandoned water conduit located underground in the northeast corner of the property will be abandoned by its entire removal. A temporary 2:1 slope and stairway will link the surface parking lot area to the temporary campus. A temporary vehicle driveway and loading area with handicapped parking spaces will be provided to the north of the site providing access from Shoshone Avenue.

---

5 *Telephone conversation with Jim Emerson, Principal Civil Engineer, B&E Engineers, December 2000.*

Final Phase

Grading activities for the Final Phase will require approximately 62,000 cy of cut and 12,500 cy of fill.[6] An export of approximately 49,500 cy of soil will be required. As shown on the Final Phase Site Plan, final phase grading operations will include excavating the proposed education building footprint for the proposed 75,00 square foot Education Building. Conventional foundations bearing in bedrock or certified compacted fill are proposed for structural support. The Final Phase will also require deeper cuts into the slope at the northern portions of the project site to provide increased usable area and an even surface elevation for an open space grass play area. Excavation into the slope will require the construction of retaining walls on the order of 20 feet. The alignment of the proposed retaining walls will generally conform to the property line along Ridgeway Road.

Slope Stability

Bedding plane attitudes illustrated on the referenced regional geologic maps and observed in the fault trenches indicate that the predominant orientation of the bedrock on the site is a west-northwest strike and a moderately southwest dip ranging from 38 to 60 degrees. This geometric relationship is supported with respect to the existing and proposed slopes, which is considered favorable with respect to the gross stability of the site. However, special attention to daylighted bedding conditions will be required with future temporary excavations for south-facing retaining walls.

Preliminary gross slope stability analyses were performed for 1 1/2:1 ratio cut slopes which may be required in the northern portion of the site. According to preliminary grading plans, cut slopes up to 40-feet in height may be required. Bedding planes are generally moderately dipping to the southwest, which results in supported conditions with respect to the proposed cut slopes. The results of Geosystems' analyses indicate that 40-foot-high cut slopes will have a static and pseudostatic factor of safety greater than 1.5 and 1.1, respectively, and are considered grossly stable in their proposed configurations. Specific slope stability analyses will be performed at the completion of the finalized grading plans. Based on Geosystems' observations of the geotechnical factors found at the subject site, the subject site is grossly stable and suitable for the proposed development.

Seismicity

Ground shaking resulting from a moderate to major earthquake (magnitude 6.0 or greater) can be expected during the life span of the proposed structure. Property owners and the general public should be aware that any structure or slope in the southern California region could be subject to significant

---

6 Ibid.

damage as a result of a moderate or major earthquake. Compared to the existing residential uses on site, the proposed Hillcrest Christian School West Campus Expansion Plan will attract a greater number of individuals to the West Campus site on a day to day basis. In this regard, the project will increase the potential for human health hazards or destruction of property to occur on the project site during a sizable seismic event. The risks associated with seismic activity are unavoidable and inherent to any location throughout the southern California region. It should be noted that present building codes and construction practices and the recommendations presented in the Fault Rupture Hazard Investigation Report are intended to minimize structural damage to buildings and loss of life as a result of a moderate or major earthquake. While it is impossible to totally prevent structural damage to buildings and loss of life as a result of seismic events, adherence to all applicable building codes and regulations and the geotechnical recommendations presented in the Fault Rupture Hazard Investigation report can reduce such impacts to less than significant levels.

Fault Rupture

Based on the findings of the geotechnical investigation presented in the Fault Rupture Hazard Report prepared by Geosystems, the site is considered suitable from a soils and engineering-geologic standpoint for the proposed development of the proposed 75,000 square foot 2- and 3-story educational facility. As previously discussed, no evidence of active faulting was observed during field exploration. The Fault Rupture Hazard Investigation concluded that an active trace or potentially active strand of the Mission Hills fault, or any other fault, does not lie between the site's southern property line and 50-feet north of the proposed building limits. As such, no setback restriction zones with regard to active faults are applicable to the proposed project site. The Fault Rupture Hazard Investigation further concluded that major foundation problems are not anticipated as a result of earthquake induced liquefaction, fault ground rupture or displacement, and differential settlement of natural earth materials, provided the foundation system is constructed as recommended, within the limitations presented therein. Moreover, project design and construction to resist ground motions and the associated ground accelerations, in conformance with current building code requirements as required by the City of Los Angeles Department of Building and Safety, will reduce potential seismic hazards to a less than significant level. Therefore, impacts associated with fault rupture hazards would be considered less than significant.

CUMULATIVE IMPACTS

As indicated on the related Project Location Map presented in Section III, of this Draft EIR, there are no related projects close enough to the project site to induce cumulative grading or slope stability impacts. Although project impacts associated with geologic and seismic impacts are generally attributed to a single event at a specific location, impacts occurring as a result of ground shaking are not localized in nature and has the ability to affect large areas according to the strength of the seismic event

and the transmission characteristics of the shock waves associated with the seismic event. Cumulative development in the area would, therefore, increase the potential for increased exposure to seismic hazards by bringing more people into a known seismically active area. Any future development that increases the on-site population on the project site (or anywhere else within the southern California region) would likely result in the introduction of additional students, employees and visitors to the site, thereby increasing the number of people who could be affected by a geologic or seismic occurrence. However, as with the proposed project, it is anticipated that development of each of the related projects would be required to conform with all applicable City Building Codes, Zoning Codes, and General Plan policies and regulations applicable to each respective site. Therefore, development of the proposed project along with the related projects would not have a significant cumulative impact with respect to geotechnical or seismic hazards.

MITIGATION MEASURES

The following mitigation measures are recommended to further reduce the project's impact upon earth resources and geotechnical hazards:

1. The design and construction of the project shall conform to the Uniform Building Code seismic standards as approved by the City of Los Angeles Department of Building and Safety, and the geotechnical recommendations presented in the Fault Rupture Hazard Investigation report.

2. Grading shall conform to the recommendations provided by the geotechnical report and to the specifications of the City of Los Angeles Landform Grading Manual guidelines, subject the approval by the Advisory Agency and the Department of Building and Safety's Grading Division.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of the mitigation measures listed above would further reduce impacts associated with soils and geotechnical hazards to less than significant levels.