
IV. ENVIRONMENTAL IMPACT ANALYSIS

G. GEOLOGY AND SOILS

The following section is a summary of the geotechnical report conducted for the proposed project. The Report of Geotechnical Investigation Proposed Condominiums 2055 Avenue of the Stars (the “Geotechnical Report”) was prepared by MACTEC, dated September 6, 2005. A copy of this report can be found as Appendix E to this Draft EIR.

ENVIRONMENTAL SETTING

The project site is approximately 3.8 acres in size and is rectangular in shape. It is currently occupied by a recently vacant hotel tower. The project site is located at the northwest corner of Olympic Boulevard and Avenue of the Stars in the City of Los Angeles.

Geologic Conditions and Topography

The project site is located within the western portion of the Coastal Plain of Los Angeles County, a deep northwest trending depositional basin bounded to the northeast by the Puente Hills and Whittier Fault, to the southwest by the folds and faults of the Newport-Inglewood structural zone, and to the southeast by the Santa Ana Mountains. The site slopes moderately to the southwest, and is higher in elevation than most of the surrounding properties. According to the United States Geological Survey (USGS) Beverly Hills, CA 7.5 Minute series topographic map, the project site’s elevation is approximately 310 feet above mean sea level (msl).¹

Subsurface exploration was conducted for the Geotechnical Report, which consisted of four borings. Two borings were drilled to a depth of approximately 75 feet below the existing ground surface (bgs) and two shallower borings were drilled to a depth of five feet bgs in order to assess potential methane concentrations. A complete discussion of the methane that underlies the project site is provided in Section IV.H (Hazards and Hazardous Materials) with an accompanying report in Appendix G of this Draft EIR.

In addition, borings have been drilled to a depth of approximately 100 feet in prior geotechnical investigations (see Appendix E to this Draft EIR for a discussion of prior geotechnical investigations).

¹ *IVI International Inc., Phase I Environmental Site Assessment, St. Regis Hotel, 2055 Avenue of the Stars, Los Angeles, CA 90067, June 3, 2003.*

Soil Conditions

Fill soils to a depth of 30 feet bgs, likely related to basement backfill, were found in the borings conducted for the Geotechnical Report. It is likely that the fill soils are related to the basement backfill of the hotel. It is anticipated that deeper fill down to approximately five feet below the depth of the hotel basement level would be encountered within and immediately adjacent to the basement areas. Natural soils were found down to a depth of approximately 45 feet bgs, which consist predominately of very still to hard lean clay with embedded layers of silts and sands. Deeper soils consist of dense to very dense sands.

The groundwater table was not encountered during the subsurface exploration for the Geotechnical Report or during prior explorations. The historic high groundwater level for the project site, as reported by the California Geologic Survey² is at a depth of approximately 50 feet bgs. However, shallower perched zones are likely.

With respect to corrosion, the onsite soils are corrosive to ferrous metals, aggressive to copper, and have negligible sulfate attack potential on concrete. Corrosion test results are included at the end of Appendix A to the Geotechnical Report (Appendix E to this Draft EIR).

Liquefaction

Liquefaction is a process by which water-saturated unconsolidated sediments lose their strength due to increased pore pressure during or after an earthquake. Liquefaction potential is greatest where the groundwater level is shallow, and loose, fine sands occur within a depth of about 50 feet. Liquefaction potential decreases as grain size and clay and gravel content increase. Liquefaction potential increases as ground acceleration and shaking increases during earthquakes.

According to the City of Los Angeles Safety Element³ and the California Geological Survey, the project site is not located within a liquefaction hazard area. Furthermore, based on the results of the subsurface explorations, the granular site soils are dense to very dense and would not be susceptible to liquefaction.

Seismic Conditions

The entire Southern California area is considered to be a seismically active region. The region has numerous active, potentially active, and inactive faults. An active fault is defined as a fault that has had a surface displacement within Holocene times (about the last 11,000 years). A potentially active fault is a

² California Division of Mines and Geology, *Seismic Hazard Evaluation of the Beverly Hills 7.5-Minute Quadrangle, Los Angeles County, California, Open-File Report 98-14, 1998.*

³ City of Los Angeles, *Safety Element of the General Plan, 1996.*

fault that has demonstrated surface displacement of Quaternary age deposits (within the last 1.6 million years).

The nearest fault is the Santa Monica Fault, which is located 2.25 miles north of the project site. The Santa Monica Fault is classified as an active fault.⁴

ENVIRONMENTAL IMPACTS

Thresholds of Significance

In accordance with Appendix G to the State CEQA Guidelines, a project could have a potentially significant geology and soils impact if it were to cause one or more of the following conditions:

- 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 or based on other substantial evidence of a known fault?
 - 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 Uniform Building Code (1994), 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?

⁴ *IVI International Inc., Phase I Environmental Site Assessment, St. Regis Hotel, 2055 Avenue of the Stars, Los Angeles, CA 90067, June 3, 2003.*

As discussed in the Initial Study (see Appendix A), the proposed project would have no impact with respect to Threshold (e) listed above. As such, no further analysis of this topic is required (see also Section IV.A of this Draft EIR).

Based on the City of Los Angeles Draft L.A. CEQA Thresholds Guide, the proposed project would also result in a significant geotechnical impact if it exceeds the following threshold:

- A project would normally have 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.

Project Impacts

Soil Stability

The excavation for the subterranean portion of the proposed project would extend approximately 45 feet below the existing ground surface (bgs). The proposed excavation would be roughly at the lowermost basement depth of the existing hotel building. As discussed above, fill soils to a depth of 30 feet bgs, likely related to basement backfill, were found in the borings. The natural soils down to a depth of approximately 45 feet bgs consist predominantly of very stiff to hard lean clay with embedded layers of silts and sands. Deeper soils consist of dense to very dense sands. Construction of the proposed project would require mass excavation to a depth of approximately 45 feet bgs. Local excavation and earthwork would be conducted to provide footings, foundations and subterranean walls to support the proposed building.

The estimated settlement of the proposed structure, supported by foundations as recommended in the Geotechnical Report, would be range approximately from 3/4 inch for a bearing pressure of 6,000 pounds per square foot to 1 1/4 inch for a bearing value of 12,000 pounds per square foot.

All such work would be conducted in accordance with the recommendations in the Geotechnical Report (see Appendix E to this Draft EIR). With the implementation of the recommendations in the Geotechnical Report, impacts associated with soil stability would be less than significant.

Expansive Soils

The near-surface clay soils are expansive and will shrink and swell with changes in the moisture content. As recommended in the Geotechnical Report, where clay soils are encountered beneath the proposed cement concrete paving and at-grade concrete walks and slabs, at least two feet of relatively non-expansive soil would be placed in these areas during the excavation associated with the proposed project. With the implementation of this project design feature, the potential impact associated with expansive soils would be less than significant.

Erosion and Topsoil

Although project development has the potential to result in the erosion of soil during site preparation and construction activities, erosion would be reduced by implementation of appropriate erosion controls during grading. Minor amounts of erosion and siltation could occur during project grading, which would be collected in a controlled manner. However, the potential for soil erosion during the ongoing operation of the proposed project is relatively low due to the generally level topography of the area to be developed within the project site. All grading activities require grading permits from the Department of Building and Safety, which include requirements and standards designed to limit potential impacts to acceptable levels. In addition, all onsite grading and site preparation would comply with applicable provisions of Chapter IX, Division 70 of the Los Angeles Municipal Code which addresses grading, excavations, and fills. With implementation of the applicable grading and building permit requirements and the application of Best Management Practices, a less-than-significant impact would occur with respect to erosion or loss of topsoil.

Seismic Hazards

Ground Shaking

The principal seismic hazard to the proposed project is strong ground shaking from earthquakes produced by local faults. Modern, well-constructed buildings are designed to resist ground shaking through the use of shear walls and reinforcements. The proposed construction would be consistent with all applicable provisions of the City of Los Angeles Building Code, as well as the seismic design criteria contained within the Uniform Building Code. Although the project site is located within 2.25 miles of the active Santa Monica Fault, and by many other faults on a regional level, the potential seismic hazard to the proposed project site would not be higher than in most areas of the City of Los Angeles or elsewhere in the region. Therefore, the risks from seismic ground shaking are considered to be less than significant.

Fault Rupture

The project site is located in the seismically active region of Southern California. Numerous active and potentially active faults with surface expressions (fault traces) have been mapped adjacent to, within, and beneath the City of Los Angeles. However, there are no active surface fault traces identified by the State, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map,⁵ known to be present on the project site.⁶ Therefore, the possibility of surface fault rupture affecting the project site would be

⁵ City of Los Angeles, *Safety Element of the Los Angeles City General Plan, Exhibit A, Alquist-Priolo Special Study Zones & Fault Rupture Study Areas, March 1994.*

⁶ Active faults are classified by the State Division of Mines and geology as faults showing evidence of surface displacement within the last 11,000 years.

considered remote, and the proposed project would not present any adverse impacts with respect to exposing people or property to hazardous conditions resulting from rupture of a known earthquake fault on the project site. Therefore, a less-than-significant impact would occur with respect to fault rupture.

Landslides

The topography at the project site is relatively flat, with a downward slope at the southwestern and southeastern boundaries of the site, towards Olympic Boulevard. However, no grading, excavation, or construction activities associated with the proposed project would occur at or adjacent to the downward slope near the southwestern or southeastern boundaries of the site. The project site is not located near any foothills or mountains, and the possibility of landslides occurring on the project site is minimal. Therefore, the potential impact associated with landslides would be less than significant.

Liquefaction

As discussed previously, the project site is not within an area prone to liquefaction. In addition, based on the subsurface explorations conducted for the Geotechnical Report, the underlying dense to very dense soils are not prone to liquefaction. Therefore, the potential for liquefaction of the soils underlying the project site is considered to be very low, and the associated impact would be less than significant.

CUMULATIVE IMPACTS

Geotechnical impacts related to future development in the City would involve hazards related to site-specific soil conditions, erosion, and ground-shaking during earthquakes. These impacts would be site-specific and would not be common to (nor shared with, in an additive sense) the impacts on other sites. Furthermore, development of each of the related projects and the proposed project would be subject to uniform site development and construction standards that are designed to protect public safety. Therefore, cumulative geotechnical impacts would be less than significant.

MITIGATION MEASURES

The Report of Geotechnical Investigation Proposed Condominiums 2055 Avenue of the Stars found that impacts associated with geology and soils would be less than significant. Nonetheless, to further reduce the less-than-significant impacts with respect to geology and soils, the following mitigation measures are recommended:

- (G-1) The project shall be designed in accordance with the requirements of the latest edition of the City of Los Angeles Uniform Building Code.
- (G-2) The project shall comply with the recommendations listed on pages 4 through 21 in the Report of Geotechnical Investigation Proposed Condominiums 2055 Avenue of the Stars, prepared by MACTEC, dated September 6, 2005.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

The proposed project's impacts on geology and soils would be less than significant without mitigation. The implementation of the recommended mitigation measures above would further reduce the proposed project's impacts.