# 4.4 GEOLOGY AND SOILS

*Note: After the Draft EIR was released, the applicant chose to remove the car wash facilities from the Project site, and use of the car wash area is no longer part of the proposal. All references to future use of the car wash area have been removed from the project description and the impact analysis.*

This section addresses the seismicity, topography, and soil conditions at the Project site. The impact analysis focuses on construction-related soil erosion, taking into consideration proposed construction practices and whether local geologic, soils, and seismic hazards could affect structures associated with the Project. Such hazards could include seismic ground shaking, seismically induced ground failure or liquefaction, landslides, subsidence, or potentially, soils prone to collapse or known to be expansive.

## 4.4.1 Existing Conditions

The Project site's topography is generally level, although the former car wash area and hammerhead turnaround generally slope in a southeasterly direction. The City of Goleta is located in a seismically active area, and the More Ranch Fault is immediately south of Devereux Creek in the Project area. This fault is not classified as active by the State Division of Mines and Geology or subject to an Alquist-Priolo Special Studies Zone. However, according to the Santa Barbara County Seismic Safety and Safety Element, the More Ranch Fault is considered active based on the existence of a geologically recent fault scarp (County of Santa Barbara 1991, as cited in City of Goleta 2006). The Project site is composed of the following soil types: Cb (Camarillo, variant, fine sandy loam), CgC2 (Concepcion fine sandy loam, 2 to 9 percent slopes, eroded), and CgE2 (Concepcion fine sandy loam, 15 to 30 percent slopes, eroded) (Goldstien 2015, 2016; see Appendix F). These soil types represent a minor constraint to development due to typically high expansive potential. Most of Goleta is composed of alluvial deposits, which generally have a moderate potential for liquefaction. Loose, granular soils, such as those at the Project site, are most susceptible to these effects. Slope-failure hazards such as landslides and rockfalls are generally confined to areas with steep (greater than 25 percent) slopes and unstable soils. The Project site is not within such an area (City of Goleta 2006).

## 4.4.2 Regulatory Framework

### 4.4.2.1 Federal

No federal regulations relevant to geology and soils apply to this Project.

### 4.4.2.2 State

***Seismic Hazards Mapping Act***

The Seismic Hazard Mapping Act of 1990 was adopted in part to address seismic hazards not included in the Alquist-Priolo Act, which covers strong ground shaking, landslides, and liquefaction. The Seismic Hazards Mapping Act requires the California Geological Survey to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. Cities and counties are required to use the Seismic Hazard Zone Maps in their land use planning and building permit processes.

#### 4.4.2.3 Local

***City of Goleta Building Code***
The Goleta Municipal Code Chapter 15.09 – Grading, Erosion and Sediment Control, provides the City's grading regulations. New grading, excavations, cut and fill, stockpiling, and fill compaction are subject to grading regulations if the amount of materials exceeds 50 cubic yards or the cut or fill exceeds 3 feet in vertical distance to the natural contour of the land. Grading permits are required for any grading, excavation, or fill and are provided by the Planning and Environmental Services Department.

***City of Goleta General Plan/Coastal Land Use Plan Safety Element***
The Safety Element of the City's GP/CLUP includes the following policies related to geologic and seismic hazards:

"Policy SE 4: Seismic and Seismically Induced Hazards
SE 4.2. Potentially Active Faults. Potentially active faults shall be subject to the same requirements as active faults unless and until geological or geotechnical studies demonstrate that a given potentially active fault is not active.

SE 4.4. Setback from Faults. New development shall not be located closer than 50 feet to any active or potentially active fault line to reduce potential damage from surface rupture. Nonstructural development may be allowed in such areas, depending on how such nonstructural development would withstand or respond to fault rupture or other seismic damage."

### 4.4.3 Project Impacts

#### 4.4.3.1 Thresholds of Significance

Assessment of impacts is based on review of site information and conditions and City information regarding geologic issues. In accordance with CEQA Guidelines, a project would result in a significant impact if it would:

1. Expose 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, seismic-related ground failure, including liquefaction, or landslides.
2. Result on substantial soil erosion or the loss of topsoil.
3. 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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.
4. Be located on expansive soil, creating substantial risks to life or property.
5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for disposal of wastewater.

The Project would result in limited construction in an area that is not susceptible to landslides. Construction of a gravel-covered road, water lines, and fire hydrants would not cause lateral spreading, nor would it cause subsidence, liquefaction, or collapse. Therefore, Criterion 3 is not considered further. The Project also would not include the use of septic tanks or alternative wastewater disposal systems; therefore, Criterion 5 is not considered further.

Per the City's Thresholds Manual (2008), impacts are classified as potentially significant with regard to geology if any of the following are true:

1. The project site or any part of the project is located on land having substantial geologic constraints, as determined by the City's Planning and Environmental Review or Public Works Departments. Areas constrained by geology include parcels located near active or potentially active faults and property underlain by rock types associated with compressible/collapsible soils or susceptible to landslides or severe erosion. "Special Problems" areas designated by the Goleta City Council have been established based on geologic constraints, flood hazards and other physical limitations to development.
2. The project results in potentially hazardous geologic conditions such as construction of cut slopes exceeding a grade of 1.5 horizontal to 1 vertical.
3. The project proposes construction of a cut slope over 15 feet in height as measured from the lowest finished grade.
4. The project is located on slopes exceeding 20 percent grade.

The Project would not result in potentially hazardous geologic conditions such as the construction of cut slopes exceeding a grade of 1.5 horizontal to 1 vertical, nor does it propose construction of a cut slope over 15 feet in height or would it be located on slopes exceeding 20 percent grade. Therefore, Criteria 2, 3, and 4 are not considered further.

#### 4.4.3.2 Project Impacts

Repaving the hammerhead turnaround has been completed, and this action would not have had any impacts on geology, seismicity, or soils, nor would any ongoing impacts occur.

***Impact GEO-1. Fault Rupture, Seismic Ground-shaking, Seismically Induced Landslides, or Liquefaction***

The emergency access road and associated water line are located approximately 100 feet from the More Ranch Fault, and ground rupture and earth shaking could occur during an earthquake. The site is generally level and is not in an area susceptible to landslides. There is some potential for liquefaction in the event of an earthquake, but the only structures that could be damaged would be fire hydrants and water lines~~, including the existing water line at the car wash area~~. Should a water line rupture or a hydrant be damaged, water would be released until it was shut off, but this would not pose a substantial adverse risk to people or structures. Moreover, the current California Building Code requires that the potential for liquefaction be assessed during the design of all structures and appropriate measures would need to be taken to minimize the potential for rupture. Therefore, this impact would be **less than significant (Class III)**.

***Impact Geo-2. Soil Erosion/Loss of Topsoil***

Construction within the mobile home park would be minimal and limited to installation of a water line, two new fire hydrants, and the upgrade of two existing fire hydrants. The area where construction would be located is paved and level, and no impacts associated with soil erosion or loss of topsoil would occur. As discussed in Chapter 2, a number of measures would be implemented to minimize the potential for erosion during construction of the emergency access road. A silt fence would be installed along Devereux Creek to prevent materials (rock, soil, etc.) from entering the creek during construction and maintenance, and it would remain in place during all construction and until the disturbed areas are revegetated. Once construction was complete, disturbed areas would be protected from erosion using appropriate erosion control

devices and methods. After grading and road construction is completed, the slopes north and south of the road would be hydroseeded with Santa Barbara native seed mix. Additionally, the retaining wall would help keep soils from eroding or being removed from the Project site. ~~Use of the car wash area would result in some runoff, which could lead to erosion of the undeveloped area near Devereux Creek, but given the limited velocity and relatively small amounts of water involved, potential erosion would not be substantial.~~ Periodic maintenance (e.g., resurfacing the road and trimming trees) would not result in erosion because no soils would be disturbed. Therefore, this impact would be **less than significant (Class III)**.

***Impact Geo-3. Expansive Soils***

The Project site contains expansive soils, but this would not affect the emergency access road, which would have a gravel, Class 2 road base surface. The water lines and fire hydrants would be constructed in compliance with Goleta Water District standards, which require identification of soil types and construction techniques appropriate to the site-specific conditions. Their construction and operation would not create substantial risks to life or property, and any impacts would be **less than significant (Class III)**.

### 4.4.4 Cumulative Impacts

Any impacts on geology and soils from the Project would be temporary and localized and would not contribute to a cumulative impact in combination with the related projects described in Chapter 3.

### 4.4.5 Mitigation Measures

No mitigation measures are required for geology and soils because no significant impacts were identified.

### 4.4.6 Residual Impacts

Impacts GEO-1, GEO-2, and GEO-3 would be less than significant and no mitigation would be required.