11.0 Geology, Seismology, and Soils

11.1 INTRODUCTION

This chapter describes the existing geological setting within the approximately 81-acre CLI-II project site including soils, bedrock location, topography and slopes, groundwater depth, and geotechnical conditions within the project area. Seismology issues are also addressed in this chapter.

A map based on the most recent 1:24000 scale United States Geological Survey (USGS) quadrangle maps showing topographic contours, the project site, and on-site interconnection routes was presented previously as Figure 2-1. Engineering drawings for the project are provided in Appendix B. Existing site topography is shown in the Existing Conditions Plan (Kiewit Drawing No. P010-042-CG-004-GE). Proposed contours for the project site are presented in the Overall Grading and Drainage Plan (Kiewit Drawing No. P010-042-CG-002-GE).

11.2 GEOLOGY

The topography of Long Island is shaped by the unconsolidated surficial deposits and is a result of the last glacial event to affect northeastern United States, the Pleistocene Epoch ending approximately 10,000 years ago. During this last glacial event, ice advanced across the Northeast, terminating at Long Island and Cape Cod and their associated islands. These areas are composed of thick sedimentary materials deposited during this advance, termination, and retreat of the glacial ice sheet. Elevations in the county range from sea level to almost 400 above mean sea level (MSL) at West Hills. The elevation of the proposed project site varies from approximately 105 feet above MSL to approximately 110 feet above MSL (see previous Figure 2-1). Terrain elevation across the entire approximately 81-acre parcel ranges from approximately 95 feet above MSL to approximately 110 feet above MSL. The surface topography trends to the southeast.

The project site is located within the Atlantic Coastal physiographic province in a glacial outwash plain, which is composed of sand and gravel deposited by melt-water streams in front of a glacial terminal moraine located north of the CLI-II site. This terminal moraine is a ridge-like accumulation of till, an unstratified mix of clay, silt, sand, gravel, and boulders that mark a standstill of the retreating glacial ice sheet. The local and regional glacial deposits sit upon much older coastal plain sediments dating back to approximately 100 million years ago. The surficial geology of the proposed site and region, including the outwash and terminal moraine deposits, is presented in Figure 11-1.

These glacial deposits overlay Monmouth Magothy sand and mud; Raritan sand and mud; Jurassic deposits of Ladentown basalts, Passaic conglomerate, and arkose; and Triassic Palisades diabase and Passaic mudstone and siltstone. The depth to bedrock in the area of the project site has been estimated at approximately 1,500 feet below ground surface.\(^1\) This estimate is supported by results of an electric cone penetration test (CPT) previously

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**Legend:**

- **bi** - Barrier Island
  - Sand and gravel deposit as barrier island, south shore of Long Island, may have associated dunes, thickness variable.

- **og** - Outwash sand and gravel
  - Coarse to fine gravel with sand, proglacial fluvial deposition, well rounded and stratified, generally finer texture away from ice border, thickness variable 2-20 meters.

- **fg** - Fluvial sand and gravel
  - Deposits of sand and gravel, occasional laterally continuous lenses of silt, deposition farther from glacier, age uncertain.

- **k** - Kame deposits
  - Includes kames, eskers, kame terraces, kame deltas, coarse to fine gravel and/or sand, deposition adjacent to ice, lateral variability in sorting, coarseness and thickness, locally firmly cemented with calcareous cement, thickness variable (10-30 meters).

- **km** - Kame moraine
  - Variable texture (size and sorting) from boulders to sand, deposition at an ice margin during deglaciation, positive constructional relief, locally cemented with calcareous cement, thickness variable (10-30 meters).

- **tm** - Till moraine
  - More variable sorted than till, generally more permeable than till, deposition adjacent to ice, more variably drained, may include ablation till, thickness variable (10-30 meters).

- **t** - Till
  - Variable texture (e.g. clay, silt-clay, boulder clay), usually poorly sorted diamict, deposition beneath glacier ice, relatively impermeable (loamy matrix), variable clast content - ranging from abundant well-rounded, diverse lithologies in valley tills to relatively angular, more limited lithologies in upland tills, tends to be sandy in areas underlain by gneiss or sandstone, potential land instability on steep slopes, thickness variable (1-50 meters).
conducted immediately north of the project site in November 2000, which showed no evidence of bedrock to depths of 150 feet.²

Ground failure or subsidence due to karst terrain or underground mining, slumping due to slope instability, or landslides has the potential to do damage. Degree of slope, soil conditions, and soil moisture are the major factors affecting slope stability. Karst landscapes are broad and regional in nature. Landscape features of karst include caves, fissure, tubes, underground streams, sink holes, blind valleys, and springs. According to Davies et al. (1976), there are no known karstic features present at the project site. Therefore, no ground subsidence from these conditions is anticipated.

11.3 SEISMOLOGY

Long Island is located in the middle of the North American tectonic plate. Typically, earthquakes at plate boundaries are more frequent and more intense than earthquakes in the middle of a tectonic plate. However, moderate energy earthquakes are possible in mid-plate regions, such as where the proposed CLI-II site is located.

Statistics on historical earthquakes were obtained from the USGS via its web site³ and also from the New York State 2011 Statistical Yearbook website.⁴ According to the New York State Geological Survey, damaging earthquakes have occurred in New York State on average once every 20 years, and earthquakes of up to and potentially exceeding a magnitude 6.0 are possible anywhere in New York. The 2014 Draft New York State Hazard Mitigation Plan evaluated the local vulnerability to earthquakes to determine risk and vulnerability of earthquake events by county. According to Table 3-7f of the Plan, New York State has only had 8 significant earthquakes between 1823 and 2002. Only one of those earthquakes was within the vicinity of Suffolk County in 1871, which was located near the eastern end of Long Island.

As a measure of magnitude of an earthquake, seismologists use a magnitude scale developed by Charles F. Richter to express the seismic energy released by each earthquake. Typical effects of earthquakes in various magnitude ranges are as shown in Table 11-1.

In July 2002, New York State adopted the International Building Code® (IBC), which utilizes IBC Seismic hazard maps prepared by the USGS Earthquake Hazards Program, National Seismic Hazards Mapping Project, which were last revised in 2008.

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The most damaging earthquake in New York occurred on September 5, 1944 near Massena Center in northern New York State. It had a magnitude of 6.0. Significant earthquakes in New York State between 1737 and 2013 are as shown in Table 11-2.

<table>
<thead>
<tr>
<th>Date</th>
<th>Locality</th>
<th>Latitude (North)</th>
<th>Longitude (West)</th>
<th>Magnitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 18, 1737</td>
<td>Rockaway Beach (NYC)</td>
<td>40.60</td>
<td>73.80</td>
<td>5.0</td>
</tr>
<tr>
<td>March 12, 1853</td>
<td>Lowville</td>
<td>43.70</td>
<td>75.50</td>
<td>4.8</td>
</tr>
<tr>
<td>October 23, 1857</td>
<td>Buffalo</td>
<td>42.90</td>
<td>78.30</td>
<td>4.6</td>
</tr>
<tr>
<td>December 18, 1867</td>
<td>Canton</td>
<td>44.05</td>
<td>75.15</td>
<td>4.8</td>
</tr>
<tr>
<td>December 11, 1874</td>
<td>Tarrytown</td>
<td>41.00</td>
<td>73.90</td>
<td>4.8</td>
</tr>
<tr>
<td>August 10, 1884</td>
<td>Rockaway Beach (NYC)</td>
<td>40.50</td>
<td>73.80</td>
<td>5.3</td>
</tr>
<tr>
<td>May 28, 1897</td>
<td>Plattsburgh</td>
<td>44.50</td>
<td>73.50</td>
<td></td>
</tr>
<tr>
<td>March 18, 1928</td>
<td>Saranac Lake</td>
<td>44.50</td>
<td>74.30</td>
<td>4.5</td>
</tr>
<tr>
<td>August 12, 1929</td>
<td>Attica</td>
<td>42.84</td>
<td>78.24</td>
<td>5.2</td>
</tr>
<tr>
<td>April 20, 1931</td>
<td>Warrensburg</td>
<td>43.50</td>
<td>73.80</td>
<td>4.5</td>
</tr>
<tr>
<td>April 15, 1934</td>
<td>Dannemora</td>
<td>44.70</td>
<td>73.80</td>
<td>4.5</td>
</tr>
<tr>
<td>September 5, 1944</td>
<td>Massena</td>
<td>45.00</td>
<td>74.85</td>
<td>6.0</td>
</tr>
<tr>
<td>September 9, 1944</td>
<td>Massena</td>
<td>45.00</td>
<td>74.85</td>
<td>4.5</td>
</tr>
<tr>
<td>January 1, 1966</td>
<td>Attica</td>
<td>42.84</td>
<td>78.25</td>
<td>4.6</td>
</tr>
<tr>
<td>June 13, 1967</td>
<td>Attica</td>
<td>42.84</td>
<td>78.23</td>
<td>4.4</td>
</tr>
<tr>
<td>October 7, 1983</td>
<td>Newcomb</td>
<td>43.94</td>
<td>78.26</td>
<td>5.1</td>
</tr>
<tr>
<td>October 19, 1985</td>
<td>White Plains</td>
<td>40.98</td>
<td>73.83</td>
<td>4.0</td>
</tr>
<tr>
<td>June 17, 1991</td>
<td>Summit</td>
<td>42.63</td>
<td>74.68</td>
<td>4.1</td>
</tr>
<tr>
<td>March 22, 1994</td>
<td>Cuylerville</td>
<td>42.78</td>
<td>77.86</td>
<td>3.6</td>
</tr>
<tr>
<td>April 20, 2000</td>
<td>Newcomb</td>
<td>43.94</td>
<td>78.26</td>
<td>3.8</td>
</tr>
<tr>
<td>April 20, 2002</td>
<td>Au Sable Forks</td>
<td>44.51</td>
<td>73.51</td>
<td>5.1</td>
</tr>
<tr>
<td>May 24, 2002</td>
<td>Au Sable Forks</td>
<td>44.51</td>
<td>73.51</td>
<td>3.1</td>
</tr>
<tr>
<td>July 23, 2007</td>
<td>Berne</td>
<td>42.60</td>
<td>74.12</td>
<td>3.1</td>
</tr>
<tr>
<td>May 17, 2009</td>
<td>Rensselaerville</td>
<td>42.57</td>
<td>74.11</td>
<td>3.0</td>
</tr>
<tr>
<td>December 13, 2009</td>
<td>Rensselaerville</td>
<td>42.57</td>
<td>74.11</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Notes:  
(1) Estimated magnitude.  
(2) Caused by roof collapse in salt mine.
Seismic Zone classifications are based on peak ground acceleration. Peak Ground Acceleration (PGA) is a measure of the maximum force experienced by a small mass located at the surface of the earth during an earthquake. The IBC also evaluates peak ground acceleration with spectral acceleration, and a corresponding probability of exceeding a spectral acceleration level. Spectral acceleration (SA) serves as a design index for buildings, to withstand peak acceleration forces exerted by earthquakes (USGS, 2002). Whereas PGA is what is experienced by a particle on the ground, spectral acceleration is approximately what is experienced by a building, as modeled by a particle on a massless vertical rod having the same natural period of vibration as the building. Shorter buildings (less than 7 stories) have shorter natural periods on the order of 0.2 to 0.6 seconds, whereas taller buildings have greater natural periods greater than 0.6 seconds. The acceleration values, in percent gravity, for a particular site must be interpolated from the IBC maps.

A Seismic Hazard Map, more commonly referred to as a Percent Peak Ground Acceleration (%PGA) map, for the State of New York is included as Figure 11-2. The map shows the %PGA values for New York State with a 10% chance of being exceeded within 50 years. %PGA is a common earthquake measurement that shows three things: the geographic area affected (all colored areas on the map), the probability of an earthquake of each given level of severity (10% chance in 50 years), and the strength of ground movement (severity) expressed in terms of percent of the acceleration force of gravity (%g) or 32 feet per second squared (the PGA is indicated by color).

The IBC maps and corresponding 2008 National Seismic Hazard Mapping Project maps of the United States Geological Survey indicate that Suffolk County has a PGA of 3% to 4% g for earthquakes with a 10-percent probability of occurring within 50 years, which is an area of lesser earthquake risk than western Long Island and New York City. Moderate shaking and very light damage is generally associated with a 3 to 4%g earthquake.

According to the 2011 New York State Standard Multi-Hazard Mitigation Plan (State Mitigation Plan), soil type can substantially increase earthquake risk. For instance, “liquefaction” of soils during an earthquake is a commonly used term to describe how certain saturated “soft soil” ground can sometimes take on the characteristics of fluid when shaken by an earthquake. Amplification (strengthen) of shaking also results in areas of “soft soils” which includes fill, loose sand, waterfront, and lake bed clays. Accordingly, the National Earthquake Hazard Reduction Program (NEHRP) developed a soil classification system for New York State which indicates five types of soils that either tend to further amplify and magnify or reduce ground motions from an earthquake classified as follows:

- “A” - Very hard rock (e.g., granite, gneisses; and most of the Adirondack Mountains)
- “B” - Rock (sedimentary) or firm ground
- “C” - Stiff Clay
- “D” - Soft to medium clays or sands
- “E” - Soft soil (including fill, loose sand, waterfront, lake bed clays)
Earthquake Peak Ground Acceleration (PGA) maps indicate general regions that have a seismic risk that tends to be higher. Those regions include: The North and Northeast third (1/3) of NYS (The North Country/Adirondack Region including a portion of the Greater Albany-Saratoga region), the Southeast corner (including the greater NYC area and western Long Island), and the Northwest corner (including the City of Buffalo and vicinity) of NY State, in that order from higher to lower. A NYS Geological Survey (NYSGS) report entitled “Earthquake Hazard in New York State” supports the indications of the PGA map by identifying and characterizing these regions in NYS as “more active” (seismically).

Source is Figure 3-7d of the Draft 2014 New York State Standard Multi-Hazard Mitigation Plan (State Mitigation Plan) from the NYS Division of Homeland Security and Emergency Services website.
The potential for liquefaction of the subsoils in the area of the site was evaluated based on soil type, density, and depth to groundwater during a geotechnical investigation completed for the adjacent CLIEC facility in 2005 (see Appendix I). The geotechnical report indicated that the groundwater table is significantly below the ground surface and the subsoils are not saturated within a 70 to 80 foot zone below the bottom of any proposed shallow foundation. Because the primary cause of soil liquefaction is an increase in pore water pressures resulting in a loss of shear strength due to a seismic event, without saturated soil conditions liquefaction is virtually impossible in the unsaturated zone. The geotechnical report indicated that soils at the adjacent site were also primarily "dense" and granular in nature, which also reduced the possibility of soil liquefaction. Based on these site characteristics, the potential for liquefaction of the foundation subgrade soils at this site are considered to be minimal.

11.4 SOILS

Figure 11-3 presents the soil map for the project site.

According to the Soil Survey of Suffolk County (USDA, 1975), the subject site is located with the Riverhead-Plymouth-Carver Association, which is characterized by deep, nearly level to gently sloping, well drained and excessively drained soils which are moderately to coarsely textured, and are located on the southern outwash plain. This association is mainly in woods or within areas of urban expansion. The description states that the level topography, ease of excavation, and good drainage makes this association well suited to urban and suburban developments.

Surficial soils across the project site consist of mainly of Haven loam (HaA) and Plymouth loamy sand (PlA), with smaller areas containing Riverhead Sandy loam (RdA and RdB) as well as Carver and Plymouth sands (CpE).

The Haven series consists of deep, well-drained, medium-textured soils that formed in a loamy or silty mantle over stratified coarse sand and gravel. The Plymouth series consists of deep, excessively drained, coarse-textured soils that formed in a mantle of loamy sand or sand over thick layers of stratified coarse sand and gravel. The Carver series consists of deep, excessively drained coarse-textured soils located on moraines or a few steep areas on side slopes of some of the more deeply cut drainage channels on outwash plains.

Past geotechnical investigations for the adjacent CLIEC revealed topsoil thickness between 1 inch and 3 inches. Table 11-3 describes the various soil types, their characteristics, and important suitability features on the basis of the Suffolk County Soil Survey. A detailed geotechnical investigation is planned in the near future in order to obtain detailed technical information required for engineering design of the project.
Caithness Long Island II, LLC Facility

MAP SYMBOL | SOIL NAME
---|---
RdA | Riverhead sandy loam
RdB | Riverhead sandy loam
PIA | Plymouth loamy sand
HaA | Haven loam
CpE | Carver and Plymouth sands

Proposed Caithness Long Island II Facility

Sills Road Substation Expansion

Existing LIPA Sills Road Substation

Existing Caithness Long Island Energy Center

Soils Map

Figure 4

June 2012
### Table 11-3

**Soil Characteristics**

<table>
<thead>
<tr>
<th>Soil Unit</th>
<th>Slope %</th>
<th>Water Table/ Kind (feet below surface)&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Hydro-logical Group&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Permeability (in/hr)&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Suitability for Pipelines&lt;sup&gt;4&lt;/sup&gt;</th>
<th>Suitability for Streets&lt;sup&gt;4&lt;/sup&gt;</th>
<th>Suitability for Foundations for Low Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>HaA – Haven loam</td>
<td>0-2</td>
<td>&gt;4/apparent</td>
<td>B</td>
<td>0.63 - &gt;6.3</td>
<td>Moderate: Stability</td>
<td>Slight</td>
<td>Low compressibility</td>
</tr>
<tr>
<td>PIA – Plymouth loamy sand</td>
<td>0-3</td>
<td>&gt;4/apparent</td>
<td>A</td>
<td>&gt;6.3</td>
<td>Moderate: Stability</td>
<td>Slight</td>
<td>Low compressibility</td>
</tr>
<tr>
<td>RdA – Riverhead sandy loam</td>
<td>0-3</td>
<td>&gt;4/apparent</td>
<td>B</td>
<td>2.0 - &gt;6.3</td>
<td>Moderate: Stability</td>
<td>Slight</td>
<td>Low compressibility</td>
</tr>
<tr>
<td>RdB – Riverhead sandy loam</td>
<td>3-8</td>
<td>&gt;4/apparent</td>
<td>B</td>
<td>2.0 - &gt;6.3</td>
<td>Moderate: Stability</td>
<td>Moderate: Slopes</td>
<td>Low compressibility</td>
</tr>
</tbody>
</table>

**Notes:**

1. Water table is the highest level at which a saturated zone more than 6 inches thick appears for a continuous period of more than 2 weeks during most years.
   - **Apparent Water Table:** A thick zone of free water in the soil. An apparent water table is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. **Perched Water Table:** A water table standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

2. Refers to soils grouped according to their runoff-producing characteristics. Group A soils have a high infiltration rate (i.e., 0.3-0.45 in/hr), when thoroughly wet, and a slow runoff potential. Group D soils, at the other extreme, have a very slow infiltration rate (i.e., 0.00-0.05 in/hr), and a high runoff potential. Primarily, soils on the site are Group B, with Group A soils toward the northwest, southwest and southeast corner of the 81.48-acre parcel. The project site, where the project footprint would be located, and the location of on-site interconnections are located over Group B soils. These soils generally have a high infiltration rate, and are well drained.

3. Permeability is the quality that enables a soil to transmit water or air. Terms used to describe permeability of the soils for this site include:
   - **Moderate:** 0.63 to 2.0 in./hr.; **Moderately rapid:** 2.0 to 6.3 in./hr.; **Rapid:** >6.3 in./hr.

4. The degree of soil limitation on shallow excavations, dwellings, and roads is as follows:
   - **Slight:** Soil has few or no limitations for a particular use or any limitations that are present can be overcome at little cost.
   - **Moderate:** Soil properties on site and site features are unfavorable for the specified use, but the limitations can be overcome or minimized by special planning and design.
   - **Severe:** Soil properties on site and site features are unfavorable or difficult for use. The costs to overcome the limitations are excessive.

**Source:** Soil Survey of Suffolk County, New York, USDA Soil Conservation Service, April 1975.

### 11.4.1 ANTICIPATED CUT AND FILL

This section presents a preliminary calculation of the quantity of cut and fill necessary to construct the project, the amount of fill or cut to be brought to or from the project site, and a delineation of temporary cut or fill storage areas to be employed.
The current topography of the approximately 81-acre parcel is relatively flat, with some mounding in the northern portion of the project site. To construct the project facilities, some excavation and fill activity will be necessary to achieve a site level enough for construction, and to remove, if necessary, soils unsuitable as structural fill. It is anticipated that soils would not need to be removed from the site, including the upper silty clay subsoil layer, which can be exchanged with suitable material on site or can be rendered suitable for load bearing purposes. Upon completion of a detailed geotechnical investigation, it will be possible to determine the quantities and suitability of this upper subsoil layer for load bearing purposes definitively.

The site grading design (base elevation approximately 107 feet above MSL) is designed to generate a balanced cut and fill to the maximum extent possible. It is estimated that transportation of cut material or fill material from or to the site would not be necessary, as any excess material would be spread over the site or bermed as part of the landscaping plan. Any excess material that cannot be used as part of the final site grading and landscaping plan, which would be developed as part of the future site plan review process, would be trucked from the site. If soil export is required, Caithness will coordinate all soil export activities with the Town of Brookhaven, as applicable.

Excavation of soil in cut areas is expected to be completed using a scraper and earthmoving equipment. The soil would be moved to the fill areas and deposited in lifts, with each lift compacted using bulldozers and heavy roller equipment. The areas around the processing station would be used for temporary storage of any fill material that cannot be immediately used as fill. Topsoil for use in final grading would be stored on site until needed. Proposed cut/fill storage areas would be located within the designated construction laydown areas.

11.4.2 FOUNDATION DESIGN

Based on the geotechnical study completed for the adjacent CLIEC facility in 2005 (see Appendix I), the soils within the project site are generally competent in density, varying from medium dense to very dense, except in the upper 2 to 4 feet. Under static loads, these soils are capable of providing adequate support for the project buildings using shallow slab foundations. The upper 2 to 4 feet of the lower density/consistency soils, however, may be suitable for general site grading, berming, and for use in non-load bearing areas only. After further testing it may be determined that this soil can be improved for use, if necessary, in load bearing areas by amending it with various materials. Due to the depth to bedrock, the project foundations are not anticipated to require pile driving, nor is blasting anticipated. The above conclusions are contingent upon the seismic conditions at the site not having overriding influence over the static conditions, and would be verified during subsequent site geotechnical investigations.

11.5 POTENTIAL IMPACTS OF THE PROJECT

No unique or unusual geologic resources exist on the project site. The project site is nearly level, and bedrock in the area of the site has been estimated at being located approximately 1,500 feet below the existing ground surface. Support piles would not reach the bedrock, so bedrock would not be affected. Considering the depth to bedrock
project site, blasting would not be required during construction. Furthermore, based on recent geotechnical investigations conducted at the CLIEC site, which is over soil types consistent with those to be encountered at the CLI-II project site, the soils at the site are considered competent to support the loads associated with the project, without the need for bedrock support, using design practices to be developed as a result of a site geotechnical program. The seismic design for the proposed facility would be based on the requirements of the International Building Code. Adherence to these requirements would minimize potential risks associated with seismic events. Based on the review of the seismic history in the vicinity of the CLI-II project site, minor to moderate energy earthquakes are possible, however seismic provisions are in place within the building codes that take into account the seismic rating of the region. The CLI-II project structures would be constructed in accordance with the New York State Uniform Fire Prevention and IBC, including pertinent seismic design provisions of the code.

Excavation and grading for the facility at the project site would be required to promote good site drainage and runoff control and install manholes, foundation slabs, and catch basins. The current topography of the project site is relatively flat with some rises located in the northern portion of the parcel. To construct the project facilities, some excavation and fill activity is likely to be needed to achieve a site level enough for construction, and to remove, if necessary, any soils unsuitable as structural fill. Excavation of soil in cut areas is expected to be completed using a scraper and earthmoving equipment. Excavated soil would be moved to the fill areas and deposited in lifts, with each lift to be compacted using bulldozers and heavy roller equipment. Topsoil for use in final grading would be stored on site until needed. Soil erosion and sediment controls would be installed prior to excavation activities in order to minimize the potential for erosion and soil loss. Any underlying soils which are determined unsuitable would be removed from the excavation area and replaced with clean fill that would be transported to the site, as needed. All soils disposed of off-site would be disposed of in accordance with all applicable rules and regulations. The transport of significant quantities of soil from the site is not anticipated.

None of the soil or geologic conditions present at the project site are anticipated to present any engineering or construction issues that cannot be easily addressed through conventional construction methods. Further, based on a review of data from past geotechnical investigation conducted on nearby properties, the native and anthropogenic unconsolidated strata underlying the approximately 81-acre parcel are considered suitable to support the proposed interconnection facilities. Considering depth to bedrock in the project area, blasting would not be required during construction of the on-site interconnections.