4.5 GEOLOGY AND SOILS

This section analyzes geologic and soils conditions and impacts for the proposed *Parks Master Plan 2030* (Project) based on a review of existing City plans and studies. This section also draws from the City of Santa Cruz General Plan 2030 EIR (SCH#2009032007), which was certified on June 26, 2012, regarding background information on geology and soils. The General Plan EIR is incorporated by reference in accordance with section 15150 of the State CEQA Guidelines. Relevant discussions are summarized in subsection 4.5.1. The General Plan EIR is available for review at the City of Santa Cruz Planning and Community Development Department (809 Center Street, Room 101, Santa Cruz, California) during business hours: Monday through Thursday, 7:30 AM to 12 PM and 1 PM to 3 PM. The General Plan EIR is also available online on the City's website at: http://www.cityofsantacruz.com/Home/Components/BusinessDirectory/BusinessDirectory/102/1775.

Public and agency comments were received during the public scoping period in response to the Notice of Preparation (NOP). No comments were received regarding geology and soils. Public comments received during the public scoping period are included in Appendix A.

4.5.1 Environmental Setting

Regulatory Setting

Federal and State

The Uniform Building Code (UBC) is published by the International Conference of Building Officials. It forms the basis of about half of the state building codes in the United States, including California's, and has been adopted by the California Legislature together with Additions, Amendments, and the Repeals to address the specific building conditions and structural requirements in California. The UBC defines different regions of the United States and ranks them according to their seismic hazard potential. There are four types of these regions, which include Seismic Zones 1 through 4, with Zone 1 having the least seismic potential, and Zone 4 having the highest seismic potential. Further, the UBC provides guidance on foundation design and structural engineering for a variety of soils.

The Federal Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390), adopted by Congress in October 2000, requires state and local governments to develop hazard mitigation plans as a condition for federal grant assistance. The City of Santa Cruz adopted its "Local Hazard Mitigation Plan" in September 2007, which was updated in 2017. The detailed five-year plan identifies potential natural and man-made hazards, assesses their likely risk, and includes mitigation methods to reduce risks. The potential hazards identified in the plan include earthquakes and liquefaction, wildfires, floods and associated coastal storms, coastal erosion, drought, tsunami, dam failure, and landslides. Mitigation measures proposed to address these risks include prioritized actions that include hazard

event planning, emergency preparedness coordination and education, facility upgrades, monitoring actions and other actions in response to specific hazards.

State

Alquist-Priolo Earthquake Fault Zoning Act. The Alquist-Priolo Earthquake Fault Zoning Act was passed by the state of California in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The purpose of the act is to prevent the construction of buildings used for human occupancy over the surface trace of active faults. The Act requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults and to issue appropriate maps. Local agencies must regulate most development projects within the zones. Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings will not be constructed across active faults. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault (generally 50 feet), although local agencies can be more restrictive than state law requires (California Department of Conservation, 2007a). There are no state-delineated Alquist-Priolo fault zones in the City of Santa Cruz.

Seismic Hazards Mapping Act. The Seismic Hazards Mapping Act (SHMA) addresses non-surface fault rupture earthquake hazards, including strong ground shaking, liquefaction, and seismically induced landslides. The goal is to mitigate seismic hazards to protect public health and safety. Pursuant to the SHMA, the state Department of Conservation is directed to provide local governments with seismic hazard zone maps that identify areas susceptible to amplified shaking, liquefaction, and earthquake-induced landslides or other ground failures. Site-specific geotechnical hazard investigations are required by SHMA when construction projects fall within these areas. Neither the City of Santa Cruz nor any part of Santa Cruz County is located within a currently designated state-Seismic Hazard Mapping Program zone (California Department of Conservation, 2007b).

California Building Code. Title 24 of the California Code of Regulations, formerly known as the California Building Code (CBC), sets forth minimum requirements for building design and construction in public buildings and a large percentage of private buildings. In the context of earthquake hazards, the CBC design standards have a primary objective of ensuring public safety and a secondary goal of minimizing property damage and maintaining function during and following a seismic event. The CBC prescribes seismic design criteria for different types of structures and provides methods to obtain ground motion inputs. The CBC also requires analysis of liquefaction potential, slope instability, differential settlement, and surface displacement due to faulting or lateral spreading for various categories of construction. Recognizing that the risk of severe seismic ground motion varies from place to place, the California Building Standards Code seismic code provisions vary depending on location (Seismic Zones 0, 1, 2, 3, and 4—with 0 being the least stringent and 4 being the most stringent). The City of Santa Cruz is located in Seismic Zone 4.

Paleontological Resources. California Public Resources Code Section 5097.5 prohibits excavation or removal of any "vertebrate paleontological site…or any other archaeological, paleontological or

historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Unauthorized disturbance or removal is a misdemeanor.

Local

The City's Municipal Code Chapter 24.14 (Environmental Resource Management) includes "Conservation Regulations." Section 24.14.030 provides "Slope Regulations" to minimize risks associated with development in areas characterized by combustible vegetation and steep and/or unstable slopes. Generally, areas with 30+ percent slopes cannot be included in the density determination for a project and prohibits development in areas of 30+ percent slopes. The regulations also include setback requirements for buildings near 30-50+ percent slopes. Section 24.14.070 requires a site-specific geotechnical investigation for all development, except projects with less than four units, in areas identified in the General Plan as having a high liquefaction potential. Section 24.16.060 requires an erosion control plan for projects located within high erosion hazard areas as designated in the General Plan or for development on slopes greater than ten percent.

The Grading Ordinance is a subset of Title 18, Buildings and Construction, of the City's Municipal Code and is included in Chapter 18.45 – Excavation and Grading Regulations." It provides technical regulations of grading and excavation, in conjunction with the Environmental Resource Management provisions in Chapter 24.14, in order to safeguard life, health, safety and the public welfare; protect fish and wildlife, riparian corridors and habitats, water supplies, and private and public property, and to protect the environment from the effects of flooding, accelerated erosion and/or deposition of silt. The ordinance accomplishes this by providing guidelines, regulations, and minimum standards for clearing, excavation, cuts, fills, earth moving, grading operations (including cumulative grading), water runoff and sediment control. In addition, the ordinance includes provisions regarding administrative procedures for issuance of permits and approval of plans and inspections during construction and subsequent maintenance. The City revised the Grading Ordinance in April 2004 in order to strengthen the ordinance regarding implementation of BMPs, including those for erosion and sediment control.

Geologic Setting

The following overview is summarized from the General Plan 2030 Draft EIR (pages 4/1-5 through 5.10-19), which is incorporated by reference.

Regional Geologic Setting

e City of Santa Cruz is situated on the southwestern slope of the central Santa Cruz Mountains, part of the Coast Ranges physiographic province of California. The northwest-southeast structural grain of the Coast Ranges is controlled by a complex of active faults within the San Andreas fault system. Southwest of the San Andreas fault, the Coast Ranges, including the Santa Cruz Mountains, are underlain by a large, northwest-trending, fault-bounded, elongated prism of granitic and metamorphic basement rocks. The granitic and metamorphic basement is Cretaceous in age, or older,

and is overlain by a sequence of dominantly marine sedimentary rocks of Paleocene to Pliocene age and non-marine sediments of Pleistocene and Holocene age. The older sedimentary rocks are moderately to strongly deformed, with steep-limbed folds and several generations of faults associated with uplift of the Santa Cruz Mountains (City of Santa Cruz, April 2012, DEIR volume).

Seismic Hazards

The City is located in a seismically active region of California, and the region is considered to be subject to very intense shaking during a seismic event. The City of Santa Cruz is situated between two major active faults: the San Andreas, approximately 11.5 miles to the northeast and the San Gregorio, approximately nine miles to the southwest. There are no active fault zones or risk of fault rupture within the City (City of Santa Cruz, April 2012, DEIR volume).

According to maps developed as part of the City's adopted *General Plan 2030* and included in the General Plan and General Plan EIR, areas of the City that are identified as being subject to liquefaction hazards are mostly found along rivers and creeks and in the downtown area (City of Santa Cruz, April 2012, DEIR volume - Figure 4.10-4). According to maps developed as part of the City's *General Plan 2030* and included in the General Plan EIR, there are few mapped landslide areas in the City, but there may be landslides at the edges of DeLaveaga Park and Moore Creek Preserve (City of Santa Cruz, April 2012, DEIR volume - Figure 4.10-3).

Soils

Soils throughout the City vary. Soil erosion potential is the susceptibility of the soil to erosion by water or wind. The many soil types within the City are broadly separable into three principal units: 1) soils developed on marine terraces and alluvial flats along streams, 2) soils on hills and mountains Developed under forest canopy, and 3) soils on hills and mountains developed under brush vegetation. The soils developed on marine terraces and stream-side alluvial flats that underlie much of the City include the Watsonville, Watsonville-Tierra, Elkhorn, Pinto, Baywood, Cropley, Danville, and Soquel soil series (City of Santa Cruz, April 2012, DEIR volume).

The City's General Plan defines erosion as "the loosening and transportation of rock and soil debris by wind, rain, or running water, and/or the gradual wearing away of the upper layers of earth. Erosion of soils is influenced by bedrock and soil types, steep slopes, and construction methods. The risk of erosion depends upon the type of soil, slope of the land, slope length, rainfall amount and intensity, and vegetation cover. Removal of vegetation and the disturbance of the ground can lead to erosion. Impervious surfaces from urban development can also concentrate runoff, causing gullying and other problems. The result may include not only the loss of valuable soils but also sedimentation of stream beds, habitat degradation, landslides and increased downstream flooding potential. In general, erosion potential increases with the steepness of slope (City of Santa Cruz, April 2012, DEIR volume).

Erosion potential is rated high to very-high on the Aptos, Ben Lomond, Bonny Doon, Elkhorn, Lompico-Felton, Nisene-Aptos, Pfeiffer, Sur-Catelli, Tierra-Watsonville, Watsonville, and Zayante soil

types. These soils are found within Pogonip, DeLaveaga Park, and portions of Moore Creek Preserve and Arroyo Seco (City of Santa Cruz, April 2012, DEIR volume).

Paleontological Resources

According to maps developed for the City's *General Plan 2030* and included in the General Plan EIR, parts of the City and some parks are located within areas of mapped geologic formations with potential paleontological resources (City of Santa Cruz, April 2012, DEIR volume, Figure 4.9-5). Four geologic units within the City are known to contain fossils: Late Pleistocene alluvium, the Purisima Formation, the Santa Cruz Mudstone, and the Santa Margarita Sandstone (City of Santa Cruz, April 2012, DEIR volume). Although Holocene alluvium is generally considered too young to contain paleontological resources, this geologic unit is moderately sensitive for paleontological resources because it is underlain by sedimentary geologic units that have a high paleontological sensitivity (Ibid.). General Plan Action HA1.2.3 requires the City to notify applicants within paleontologically sensitive areas of the potential for encountering such resources during construction and condition approvals that work would be halted and resources examined in the event of encountering paleontological resources during construction. If the find is significant, the City would require treatment of the find in accordance with the recommendations of the evaluating paleontologist. Treatment may include, but is not limited to, specimen recovery and curation or thorough documentation.

4.5.2 Impacts and Mitigation Measures

Thresholds of Significance

In accordance with CEQA; State CEQA Guidelines (including Appendix G); City of Santa Cruz plans, policies, and/or guidelines; and agency and professional standards; a project impact would be considered significant if the project would:

GEO-1 Directly or indirectly cause 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 of based on other substantial evidence of a known fault; ii) strong seismic ground shaking; (iii) seismic-related ground failure, including liquefaction; or (iv) landslides;

GEO-2 Result in substantial erosion or the loss of topsoil;

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

GEO-4 Be located on an expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;

GEO-5 Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or

GEO-6 Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

Impacts and Mitigation Measures

Areas of No Project Impact

GEO-5 *Use of Septic Systems*. All of the City's parks and recreational facilities would be connected to City sanitary sewers and would not use septic systems, except for existing use of a septic system at Lower DeLaveaga Park. The Pogonip Clubhouse, which is not in use, was formerly served by a septic system. The Pogonip Master Plan recommends that the existing wastewater collection pipeline in Golf Club Drive be extended to serve the Clubhouse and adjacent buildings. Therefore, there would be *no impact*.

Project Impacts

Impact GEO-1: **Exposure to Seismic Hazards.** The Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death resulting from rupture of a known earthquake fault, seismic ground shaking, landslides, or seismic related ground failure, including liquefaction, which cannot be mitigated through the use of standard engineering design techniques. This is considered a *less-than-significant* impact.

The projects recommended in the Parks Master Plan are outdoor recreational facilities without new structural development, except for several recommended restroom facilities in urban parks, restroom and ancillary buildings at the Audrey Stanley Grove amphitheater at DeLaveaga Park, and potential renovations at the Civic Auditorium, Louden Nelson Community Center, and the Pogonip Clubhouse. The limited structural projects identified in the Plan would be subject to compliance with state and local building codes. Buildings will be required to be designed in accordance with the latest edition of the California Building Code, which sets forth structural design parameters for buildings to withstand seismic shaking without substantial structural damage. Conformance to the CBC as required by state law and the City would ensure the maximum practicable protection available for structures and their associated trenches, excavations and foundations. The continuation of design review to meet current seismic standards is the primary mitigation strategy to avoid or reduce damage from an earthquake, and seismic safety standards are a requirement for all building permits (City of Santa Cruz, September 2013). Additionally, the City's General Plan (HZ5.3.6.1) requires site specific geologic investigations by qualified professionals for proposed development in potential liquefaction areas shown on the General Plan Liquefaction Hazard Map to assess potential liquefaction hazards and requires developments to incorporate the design and other mitigation measures recommended by the investigations.

To the extent that the project will result in development that would expose people or structures to seismic shaking and liquefaction, implementation of policies in in the City's adopted General Plan, compliance with building codes would ensure and other measures included in project-specific geotechnical investigations would result in *less-than-significant impacts* related to exposure of people to and substantial damage to structures as a result of seismic and geologic hazards.

Mitigation Measures

No mitigation measures are required as a significant impact has not been identified.

Impact GEO-2: **Soils and Erosion.** The proposed Project would not directly result in substantial erosion or loss of topsoil, but may result in indirect erosion impacts related to future trail development supported by the Parks Master Plan. Therefore, this is a *potentially significant* impact.

Implementation of the Parks Master Plan and future implementation of recommended improvements could result in indirect impacts related to erosion resulting from future park and recreational facility improvements. The projects recommended in the Parks Master Plan are outdoor recreational facilities without new structural development, except for several recommended restroom facilities in urban parks and restroom and ancillary buildings at the Audrey Stanley Grove amphitheater at DeLaveaga Park[1]. These limited structural projects identified in the Plan would be small and located on generally flat topography and would not result in significant erosion. Furthermore, compliance with City regulations regarding stormwater and erosion control measures would prevent substantial soil erosion or loss of topsoil associated with potential future development, resulting in a *less-than-significant* impact.

Future trail construction, especially on steeper slopes and in areas of high erosion potential, such as Pogonip Open Space, DeLaveaga Park, and portions of Moore Creek and Arroyo Seco, could result in soil erosion if trails are not properly designed or standard erosion control measures are not implemented. This would be considered a *potentially significant impact*. The principal risk associated with erosion in an urban or semi-urban setting is due to accelerated erosion, which is caused directly or indirectly by human activities or land management. Accelerated erosion is caused principally by grading for roads and other development and by land clearing. Both these processes remove vegetative cover that protects soils from erosion, and they change natural drainage patterns in a way that can concentrate runoff, increasing its erosive potential. Consequently, erosion hazards can be best mitigated by proper planning and implementation of erosion control measures on a site-specific basis during construction, and by implementation of permanent, fail-safe drainage systems post-construction (City of Santa Cruz, April 2012, DEIR volume).

[1] An application for a Design Permit to construct a 5,500 square foot multi-purpose building to replace existing trailer at the amphitheater has been submitted to the City's Planning and Community Development Department.

Concerns also have been raised in the past about mountain bike use and potential erosion impacts. Previous City reviews found that trail design is the most important issue associated with soil erosion, and potential erosion impacts can be mitigated through trail design, trail maintenance, and seasonal closures (City of Santa Cruz, October 2011). The impacts depend on trail design, site specific issues (such as soil type), and lack of trail maintenance.

Although the *Parks Master Plan 2030* calls for improvement, enhancement and expansion of trails, the Plan also clearly calls for evaluation of new trail uses through a public process to determine if they are appropriate for a specific space (Goal II-Policy F, Action 1a). Upon future completion of these studies, any proposed site-specific proposals would be subject to development of site plans and project-level environmental analysis. Furthermore, the Parks Master Plan includes specific policies and that would be implemented that would ensure appropriate designs and would avoid or minimize potential erosion impacts. The Project includes the specific policies and actions to prevent or minimize erosion:

- *Goal I-Policy A, Action 1:* Use sustainable landscaping design to prevent erosion and runoff.
- *Goal I-Policy A, Action 1h:* Continue to implement stormwater erosion best management practices to reduce runoff, erosion, and sedimentation
- *Goal III-Policy F, Action 1f:* Realign trails or perform design improvements to address runoff, erosion, steepness of grade, and/or use conflicts.
- *Goal III-Policy F, Action 1h:* Conduct trail assessments to plan for maintenance projects, grants, and volunteer efforts to help maintain trails.
- *Goal III-Policy F, Action 1i:* Create and maintain sustainable design guidelines and maintenance standards for existing trails.
- *Goal IV-Policy A, Action 5e:* Use native or sterile plants for erosion control.
- *Goal IV-Policy B, Action 2c:* Minimize potential erosion from new trails using sustainable design features and improve existing eroding trails.
- *Goal IV-Policy B, Action 3a:* Reduce erosion and sedimentation from roads and trails.
- *Goal IV-Policy B, Action 3b:* Increase bioswales to increase percolation, entrap and filter sediments and reduce stormwater runoff from developed areas.
- *Goal IV-Policy C, Action 1:* Continue to work with Resources Conservation District to reduce stormwater runoff, sedimentation, and erosion

Implementation of the proposed Parks Master Plan policies and actions would serve to avoid or minimize potential erosion from new trail development. Future trails and other new development proposed in the future also would be subject to project-level environmental review. Trail development at Pogonip, including implementation of the Sycamore Grove interpretative trail, also would be subject to mitigation measures included in the Pogonip Master Plan EIR to prevent erosion (GEO-1i-1r, WAT-1b-c) in addition to or in combination with actions specified in the Parks Master Plan. These measures include provision for seasonal trail closures to reduce trail-related erosion and

water quality impacts during the wet season. The Pogonip Master Plan also includes trail design guidelines that call for provision of drainage on trail routes and design of site-specific erosion control features. Similar measures for trail development should be applied to other areas recommended for consideration of new trails (DeLaveaga Park, Moore Creek Preserve, and Arroyo Seco) in order to prevent erosion from construction or operation.

Mitigation Measures

Implementation of the Project policies and actions, provisions of adopted park plans and accompanying EIR requirements, and Mitigation Measures GEO-2A and GEO-2B below reduce potential erosion impacts from future trails and other development to a *less-than-significant level*.

MITIGATION GEO-2A: Implement site design and erosion control measures for new trails and other facilities in areas subject to high erosion hazards or adjacent to streams and wetland areas, including but not limited to, installation of temporary fencing on the outer edges of steep slopes and creek crossings to prevent inadvertent erosion and sedimentation from entering adjacent drainages and streams during construction; conducting grading prior to the rainy season and protecting disturbed areas during the rainy season; and revegetating disturbed cut/fill areas.

MITIGATION GEO-2B: Limit trail use and/or implement seasonal trail closures as needed during the rainy season to prevent erosion due to trail use.

Impact GEO-3: **Unstable Geologic Units or Soils.** The proposed Project would not be located on an unstable geologic unit or soil. Therefore, this is a *less-than-significant* impact.

Adoption and implementation of the proposed Parks and Recreation Master Plan 2030 would indirectly result in future park improvements, although no major structural development is proposed. Some recommendations describe developing new structural improvements including several recommended restroom facilities in urban parks, restroom and ancillary buildings at the Audrey Stanley Grove amphitheater at DeLaveaga Park, and potential renovations at the Civic Auditorium, Louden Nelson Community Center, and the Pogonip Clubhouse. Development at these locations would not be located on an unstable geologic unit or soil, except locations at Pogonip and DeLaveaga Park are in proximity to areas of landslides and potential slope instability. No major structural improvements are located on coastal bluff areas.

Areas of known steep slopes and/or landslides are primarily located within managed open space areas, as well as portions of the west side of Santa Cruz in the Western Drive area and in the northeastern portion of the City in the Prospect Heights and Carbonera areas (City of Santa Cruz, April 2012, DEIR volume). In general, landsliding can be considered a potentially significant hazard where slopes exceed a gradient of about 50 percent (Ibid.). Slope instability can sometimes occur on less than 50 percent slopes, but the risk is typically much lower. Construction on steep slopes can result

in creation of unstable slopes if not properly designed. The areas subject to these constraints are limited within the City.

Section 24.14.030 of the City's Municipal Code regulates development on steep slopes and generally prohibits development on slopes greater than 50 percent with setbacks from 30+ percent slopes. The general Plan policies and actions outlined in Table 4.10-6 also serve to reduce exposure to landslide/slope stability exposure. Policy HZ6.2 discourages development on unstable slopes with preparation of engineering geology reports where excavation and grading have the potential to create unstable slopes or be exposed to slope stability (HZ6.2.1).

With adherence to City regulations and proposed General Plan 2030 goals, policies and actions, the future development would not be located on unstable area related to landslides, slope instability or coastal bluff retreat. This is considered a *less-than-significant* impact.

Mitigation Measures

No mitigation measures are required as a significant impact has not been identified.

Impact GEO-4: **Expansive Soils.** Future parks improvements would not result in substantial new structural development that would be subject to expansive soils. Therefore, this is a *less-than-significant* impact.

The proposed Project could indirectly lead to improvements at existing City parks and recreational areas, and some areas may be sited on expansive soils. Expansive soils are those soils with high clay content are prone to expansion and contraction, known as "shrink-swell," which can result in damage to building foundations, pavement, and underground utilities. These soils are undesirable for use as engineered fill or subgrade directly underneath foundations or pavement and must be replaced with non-expansive engineered fill or require treatment to mitigate their expansion potential. Expansive soils would be an issue where new structural development is proposed.

As previously indicated, no major structural development is proposed in the Parks Master Plan. Areas of limited structural include several recommended restroom facilities in urban parks, restroom and ancillary buildings at the Audrey Stanley Grove amphitheater at DeLaveaga Park, and potential renovations at the Civic Auditorium, Louden Nelson Community Center, and the Pogonip Clubhouse. Structural designs and construction implementation in accordance with standard geotechnical/soils investigations can mitigate impacts posed by expansive or other unstable soils, i.e. unconsolidated fill. The California Building Code (Chapter 18) requires preparation of a geotechnical report for most new structures. With adherence to local and state building codes, buildings would be designed in accordance with recommendations of required geotechnical reports to prevent foundation and other structural damages. Thus, this is a *less-than-significant impact*.

Mitigation Measures

No mitigation measures are required as a significant impact has not been identified.

Impact GEO-6: **Paleontological Resources.** The proposed Project would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature. Therefore, this is a *less-than-significant* impact.

Since most of the proposed improvements involve little or no structural development, limited or no significant grading and excavation is expected. However, future construction could result in discovery of unknown paleontological resources with or without the proposed project. With application of the notification process required by the General Plan (Action HA1.2.3), future development would not result in significant impacts in the event that paleontological resources are discovered during construction, and the project would result in an indirect *less-than-significant impact* on paleontological resources.

Mitigation Measures

No mitigation measures are required as a significant impact has not been identified.

INTENTIONALLY LEFT BLANK