DOCKETED	
Docket Number:	19-SPPE-05
Project Title:	Mission College Data Center SPPE
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Document Title:	Email-Mitigation Measure Language
Description:	CEC Staff request for agreement by the applicant of mitigation measure language
Filer:	Susan Fleming
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Submitter Role:	Public Agency
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From: Payne, Leonidas@Energy <leonidas.payne@energy.ca.gov>
Sent: Thursday, March 26, 2020 8:54 AM
To: Scott Galati <sgalati@dayzenllc.com>
Subject: Seeking applicant agreement to mitigation measures for Mission College project

Scott:

Before a proposed mitigated negative declaration can be released for public review, California Environmental Quality Act (CEQA) requires that "[r]evisions in the project plans or proposals [are] made by *or agreed to* by the applicant" which avoid or mitigate all potentially significant effects (Cal. Code Regs., tit. 14, 15070(b)(1)). Once CEC staff and the applicant have found consensus on the proposed mitigation measures necessary for the determination of Mitigated Negative Declaration (MND), staff will ensure that the agreed-upon mitigation measures are incorporated into the Initial Study. Staff will publish the MND and Initial Study and submit them to the State Clearinghouse for a 30 day public review period.

In its Initial Study for the Mission College Data Center project, CEC staff will be including new mitigation measures in two technical areas. In the technical area of Biological Resources, MM BIO-1 and 2 would replace PD BIO-1 included in the Project Description chapter of the application. In the technical area of Geology/Soils, MM GEO-1 would augment the applicant proposed measures for Geology/Soils in order to mitigate potentially significant effects to paleontological resources. At this time, CEC staff believes these are the only two technical areas which will require mitigation beyond the measures identified in the application.

We have attached near-final drafts of the Bio and Geo/Soils technical sections so you can see the new mitigation language in context.

With this email, CEC staff seeks the applicant's acceptance of the attached mitigation measures for Biological Resources and Geology/Soils. We will be docketing this email and the attachments. Please docket your response at your earliest convenience so we can reference your docketed response in our Initial Study. If this mitigation language is not acceptable, we will proceed with noticing a public workshop or phone call to resolve the language and seek agreement.

Leonidas Payne—Project Manager
California Energy Commission

5.4 Biological Resources

This section describes the environmental and regulatory setting and discusses impacts associated with the construction and operation of the project with respect to biological resources that occur in the project area.

BIOLOGICAL RESOURCES **Would the project:**	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

5.4.1 Setting

The 15.78-acre project site in the City of Santa Clara is within an urbanized industrial zone, surrounded by commercial/industrial use buildings. The site was previously fully developed and the buildings located on the project property were used for electrical component manufacturing and office space. The majority of the vegetation on the property consists of non-native trees and shrubs such as Eucalyptus (*Eucalyptus sp.*), London plane tree (*Platanus x acerifolia*), Crepe Myrtle (*Lagerstromea indica*), Chinese pistache (*Pistacia chinensis*), and European white birch (*Betula pendula*). The San Tomas

Aquino Creek corridor, including the streambed and border trails defining the tops of bank, is located along the west boundary of the project site. The creek provides habitat for local wildlife and walking, running, and biking opportunities for local workers and residents. The Small Power Plant Exemption (SPPE) application states all land disturbance would avoid the San Tomas Aquino Creek and banks, including a row of mature Eucalyptus trees between the existing parking lot and the top of the west bank (Mission College 2019a).

Regulatory Background

Federal

Endangered Species Act (16 U.S.C. § 1531 et seq. and 50 C.F.R. part 17.1 et seq.). The Endangered Species Act (ESA) designates and provides for protection of threatened and endangered plant and animal species, and their critical habitat. "Take" of federally listed species as defined in the ESA is prohibited without incidental take authorization, which may be obtained through Section 7 consultation (between federal agencies) or a Section 10 Habitat Conservation Plan. The administering agencies are the United States Fish and Wildlife Service (USFWS), the National Oceanic Atmospheric Administration (NOAA), and National Marine Fisheries Service.

Migratory Bird Treaty Act (16 U.S.C. §§ 703–711). The Migratory Bird Treaty Act (MBTA) makes it unlawful to take or possess any migratory nongame bird (or any part of such migratory nongame bird including nests with viable eggs). The administering agency is the USFWS.

Clean Water Act Sections 401 and 404. The Clean Water Act (CWA) (33 U.S.C. §§ 1251–1376) requires the permitting and monitoring of all discharges to surface water bodies. Section 404 (33 U.S.C. § 1344) requires a permit from the United States Army Corps of Engineers (USACE) for a discharge from dredged or fill materials into a water of the United States, including wetlands. Section 401 (33 U.S.C. § 1341) requires a permit from the regional water quality control board for the discharge of pollutants.

Rivers and Harbors Act Section 10. Section 10 of the Rivers and Harbors Act of 1899 requires authorization from USACE for the construction of any structure in or over any navigable water of the United States. Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work affects the course, locations, or condition of the water body. This applies to any dredging or disposal of dredging materials, excavation, filling, rechannelization, or any other modification of a navigable water of the United States and applies to all structures.

State

California Endangered Species Act (Fish and G. Code, §§ 2050–2098). The California Endangered Species Act (CESA) of 1984 protects California's rare, threatened, and endangered species. CESA allows California Department of Fish and Wildlife (CDFW)

to issue an incidental take permit for a species listed as candidate, threatened, or endangered only if that take is incidental to otherwise lawful activities and specific criteria are met. These criteria are listed in Title 14, California Code of Regulations, section 783.4, subdivisions (a) and (b). For purposes of CESA, "take" means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (Fish and G. Code, § 86).

California Fish and Game Code Section 3503. This section makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.

California Fish and Game Code Section 3513. This section protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame birds. The administering agency is CDFW.

California Fish and Game Code Sections 3511, 4700, 5050, and 5515. These sections designate certain species as fully protected and prohibit the take of such species or their habitat unless for scientific purposes (see also Cal. Code Regs., tit. 14, § 670.7). Incidental take of fully protected species may also be authorized in a Natural Community Conservation Plan (NCCP) (Fish and G. Code, § 2835).

Local

City of Santa Clara 2010 – 2035 General Plan. Goals and policies specific to the City of Santa Clara General Plan to protect and preserve the city's natural habitat and wildlife are described in Chapter 5 Goals and Policies, Section 10 Environmental Quality. These goals and policies are important with respect to the proposed project:

- 5.3.1-P10 Provide opportunities for increased landscaping and trees in the community, including requirements for new development to provide street trees and a minimum 2:1 on- or off-site replacement for trees removed as part of the proposal to help increase the urban forest and minimize the heat island effect.
- 5.10.1-G1 The protection of fish, wildlife and their habitats, including rare and endangered species.
- 5.10.1-P1 Require environmental review prior to approval of any development with the potential to degrade the habitat of any threatened or endangered species.
- 5.10.1-P2 Work with Santa Clara Valley Water District and require that new development follow the "Guidelines and Standards for Lands Near Streams" to protect streams and riparian habitats.
- 5.10.1-P3 Require preservation of all City-designated heritage trees listed in the Heritage Tree Appendix 8.10 of the General Plan.
- 5.10.1-P4 Protect all healthy cedars, redwoods, oaks, olives, bay laurel and pepper trees of any size, and all other trees over 36 inches in circumference measured from

48 inches above-grade on private and public property as well as in the public right-of-way.

- 5.10.1-P11 Require use of native plants and wildlife-compatible non-native plants, when feasible, for landscaping on City property.
- 5.10.1-P12 Encourage property owners and landscapers to use native plants and wildlife-compatible nonnative plants, when feasible.

Santa Clara City Code. Chapter 12.35: Trees and Shrubs, Sections .010, .020, .030, .040, .050. These sections of the Santa Clara City Code specify how to proceed with certain tree and shrub issues, such as removal, alteration, misuse of trees and if trees become hazardous to public safety. Here is one section most applicable to the proposed project:

- 12.35.020 Alteration or removal – Permit required. No tree, plant or shrub planted or growing in the streets or public places of the City shall be altered or removed without obtaining a written permit from the superintendent of streets. No person without such authorization shall trench around or alongside of any such tree, plant or shrub with the intent of cutting the roots thereof or otherwise damaging the same.

5.4.2 Applicant Proposed Measures

The applicant proposes to implement the following mitigation measures in the project design ("PD" measures) that are intended to avoid and reduce potential impacts to biological resources to less than significant (Mission College 2019a, pages 22 and 23).

PD BIO-1: The project will incorporate the following measures to reduce impacts to nesting birds.

- If removal of the trees on-site would take place between January and September, a pre-construction survey for nesting raptors will be conducted by a qualified ornithologist to identify active nesting raptor nests that may be disturbed during project implementation. Between January and April (inclusive) pre-construction surveys will be conducted no more than 14 days prior to the initiation of construction activities or tree relocation or removal. Between May and August (inclusive), pre-construction surveys will be conducted no more than thirty (30) days prior to the initiation of these activities. The surveying ornithologist shall inspect all trees in and immediately adjacent to the construction area to be disturbed by these activities, and the ornithologist shall, in consultation with the State of California, Department of Fish and Wildlife (CDFW), designate a construction-free buffer zone (typically 250 feet) around the nest until the end of the nesting activity.[1]

1 In Response to Data Requests, Set 1 the applicant confirmed a preconstruction survey for nesting raptors on the project site and the surrounding 250 foot radius was conducted January 6, 2020, after the application for SPPE was submitted (Mission College 2020a).

- The applicant shall submit a report indicating the result of the survey and any designated buffer zones to the satisfaction of the Director of Planning and Inspection prior to the issuance of a tree removal permit by the City Arborist.[2]

PD BIO-2: The project will incorporate the following measures to reduce impacts to existing trees to be preserved.

- Barricades – Prior to initiation of construction activity, temporary barricades would be installed around all trees in the construction area. Six-foot high, chain link fences would be mounted on steel posts, driven two feet into the ground, at no more than 10-foot spacing. The fences shall enclose the entire area under the drip line of the trees or as close to the drip line area as practical. These barricades will be placed around individual trees and/or groups of trees.
- Root Pruning (if necessary) – During and upon completion of any trenching/grading operation within a tree's drip line, should any roots greater than one inch in diameter be damaged, broken or severed, root pruning to include flush cutting and sealing of exposed roots should be accomplished under the supervision of a qualified Arborist to minimize root deterioration beyond the soil line within 24 hours.
- Pruning – Pruning of the canopies to include removal of deadwood should be initiated prior to construction operations. Such pruning will provide any necessary construction clearance, will lessen the likelihood or potential for limb breakage, reduce 'windsail' effect and provide an environment suitable for healthy and vigorous growth.
- Fertilization – Fertilization by means of deep root soil injection should be used for trees to be impacted during construction in the spring and summer months.
- Mulch – Mulching with wood chips (maximum depth of three inches) within tree environments should be used to lessen moisture evaporation from soil, protect and encourage adventitious roots and minimize possible soil compaction.

5.4.3 Environmental Impacts and Mitigation Measures

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

CEC staff conducted a California Natural Diversity Database (CNDDB) search for special-status species with a nine quad search and considered this along with the

2 In Response to Data Requests, Set 2 the applicant confirmed an updated arborist report and tree removal plan was prepared in December 2019 and submitted for approval to the City of Santa Clara, after the application for SPPE was submitted. A Tree Removal Permit was issued by the city on January 20, 2020 concurrent with a demolition permit to remove existing site buildings (Mission College 2020b).

applicant's search within a two-mile radius of the project site (CNDDB 2019, 2020). A discussion of special-status species with recorded occurrences on the CNDDB search is provided below.

Western burrowing owls (*Athene cunicularia*), a California species of special concern, are known to occur and breed within the two-mile radius of the proposed project site. Their presence has been consistent in the last decade and they have recently been spotted the last several years as recorded in the Santa Clara Valley Audubon Society (SCVAS) annual bird list count. The project site lacks the natural habitat, grasslands, and ruderal habitat with ground squirrel burrows that burrowing owls prefer, however they sometimes will burrow in man-made structures like pipe culverts. Although unlikely, since their presence is known in the area there is a potential for burrowing owl to occur on the site.

The yellow rail (*Coturnicops noveboracensis*), California black rail (*Laterallus jamaicensis coturniculus*), and tricolored blackbird (*Agelaius tricolor*) are listed birds that live within marshland, wet meadows, and the latter in wetland habitat. The yellow rail is a California species of special concern. Historical records indicate its presence in the City of Santa Clara and the SCVAS lists sighting them within the past several years. The California black rail, a state-listed threatened and fully protected species, was documented on CNDDB as having occurred in the area as recently as 2016. As recently as March 2019, three California black rail were also sighted just outside the two-mile radius from the project site (SCVAS). The most recent record of tricolored blackbird, a state-listed threatened bird, in the CNDDB in the project area was for 2015 and again the SCVAS has sighted this species in the last several years. However, none of these species are expected to occur on the project site due to its urbanized condition and lack of surface waters, so no impacts are anticipated.

Historically the Western pond turtle (*Emys marmorata*), a state species of special concern, has occurred within the two-mile radius of the project site but is presumed extant within this range in the City of Santa Clara as of 2017. Western pond turtles are found in aquatic habitats in and near ponds, creeks, and rivers. During the breeding season, March–June, turtles may travel over 1500 feet away from their aquatic habitat to lay eggs and sometimes even further than this when they are overwintering (CDFW 2014). The project site is adjacent to the San Tomas Aquino Creek corridor where there is potential for Western pond turtles to be found as they could travel anywhere along this corridor. However, the project site is fully developed and the urbanized nature of the site and surrounding area makes it less likely that the turtles would travel to the project site. Thus, Western pond turtles are not expected to occur on the project site and no impacts are anticipated.

The Central California Coast Distinct Population Segment (DPS) Steelhead population (*Oncorhynchus mykiss irideus pop.* 8), which is a federally threatened species, also currently is known to occur within the Guadalupe River, located 2 miles from the project. Steelhead are born in freshwater migrating to the ocean and returning,

possibly multiple times, to spawn in freshwater again. In California, spawning typically occurs between December to April (Calfish 2019). There is potential for steelhead to occur in San Tomas Aquino Creek. However, lack of aquatic habitat on the actual project site means there are no expected impacts to this species.

The other special-status species in the region, Alameda song sparrow (*Melospiza melodia pusillula*), California tiger salamander (*Ambystoma californiense*), and Hoover's button-celery (*Eryngium aristulatum var. hooveri*) are not expected on the project site or immediate area due to the lack of suitable habitat and the developed condition of the project site.

Construction

Special-Status Species—Nesting Birds

Less Than Significant With Mitigation Incorporated. If construction occurs during the nesting bird season from February to August, it is possible for construction activities to affect nesting and migratory birds that are attracted to the nearby San Tomas Aquino Creek and other, urban vegetated areas on and near the project site. Construction activity near nesting birds is disruptive and sometimes can cause nest abandonment.

The design measure **PD BIO-1** proposed by the applicant to avoid and reduce impacts to nesting birds lacks the elements and scope necessary to ensure potential project impacts on birds protected by the Migratory Bird Treaty Act (MBTA) and Fish and Game codes would be avoided or reduced to less than significant levels. The survey is limited to raptor nests, with timing aligned to construction and removal of trees during the nesting bird season. The survey protocol does not directly address the need for repeat surveys in the event construction activities stops for an extended period of time, nor does it specify any protective measures (such as avoidance buffers) in the event nesting birds covered by the MBTA and Fish and Game codes were to establish on the site during construction.

To ensure impacts to nesting birds are avoided and minimized to less than significant, staff is proposing **MM BIO-1**, which would replace nesting mitigation in **PD BIO-1**, and provide details about survey protocols and best site practices. With adherence to **MM BIO-1** project impacts to nesting birds covered by federal and state laws would be less than significant.

The report requirements to be submitted to the City of Santa Clara for review and approval contained in **PD BIO-1** lacks detail regarding report content. Therefore CEC staff also proposes **MM BIO-2**, which clarifies the degree of detail in the nest survey report(s), which more closely aligns to accepted best practices for preparing avian survey reports.

MM BIO-1 and **MM BIO-2** were agreed to by the applicant (Mission College 2020c).

Special-Status Species—Western Burrowing Owl

Less Than Significant With Mitigation Incorporated. As noted previously, there is the potential for Western burrowing owl, a California species of special concern, to occur on the project site. The project area falls within high potential breeding habitat and is within 1.5 miles of two known Western burrowing owl breeding areas; thus, there is the possibility of burrowing owl presence on the project (SCVHA 2012). Should burrowing owl occupy the project site during construction, impacts to this special-status bird including take through disruption and destruction of active burrows would be considered significant unless mitigation is provided.

PD BIO-1 does not address the potential presence of Western burrowing owl and related best practices for avoidance and impact minimization to this species recommended in guidance prepared by the CDFW (CDFW 2012). To ensure impacts to burrowing owls are mitigated to less than significant levels, staff has included language in **MM BIO-1**, that references the specific measures for Western burrowing owl contained in CDFW 2012.

MM BIO-1: Nesting Bird Avoidance and Minimization Measures. If construction, tree removal, or vegetation clearing occurs during the nesting season (February 1 through August 31), an ornithologist or other qualified biologist shall conduct pre-construction nest survey(s) no more than 14 days prior to the initiation of the aforementioned activities within 500 feet of trees/vegetation. Surveys shall be repeated if project activities are suspended or delayed for more than 14 days during the nesting season. The ornithologist or other qualified biologist (with at least a bachelor's degree in a biological science field and demonstrated field expertise in avian species) shall be approved by the City of Santa Clara. The size of all buffer zones shall initially be a 250-foot radius around the nest of non-raptors and a 500-foot radius around the nest for raptors. Any changes to a buffer zone must be approved by the City of Santa Clara in consultation with California Department of Fish and Wildlife (CDFW). The nests and buffers shall be field checked weekly by the approved ornithologist or other qualified biologist. The approved buffer zone shall be marked in the field with exclusion fencing, within which no construction, tree removal, or vegetation clearing shall commence until the ornithologist or other qualified biologist and the City of Santa Clara to verify that the nest(s) are no longer active. If Western burrowing owl are discovered residing on the project at any time during construction outside the nesting season, then a buffer area shall be established and observed, until the animal can be passively relocated out of the construction area in accord with the CDFW 2012 guidance titled "Staff Report on Burrowing Owl Mitigation" and/or any applicable future guidance.

MM BIO-2: Nesting Bird Survey Report. The qualified biologist shall submit a copy of the pre-construction nest survey report(s) to the City of Santa Clara planning department prior to construction for review and approval. The report(s) shall contain maps showing the location of all nests, species nesting, status of the nest (e.g.

incubation of eggs, feeding of young, near fledging), and the buffer size around each nest. The report shall be provided within 10 days of completing a pre-construction nest survey.

Operation and Maintenance

Less Than Significant Impact. Routine operation of the project's backup diesel generators would result in emissions of oxides of nitrogen (NOx). Nitrogen deposition is the input of NO_X and other pollutants including ammonia (NH_3) and nitric acid (HNO_3), from the atmosphere to the biosphere. Vehicle and industrial emission sources are contributors of NH_3 and HNO_3 along with NO_X. Increased nitrogen deposition in nitrogen poor habitat allows the proliferation of non-native species that crowd out the native species. One approach for quantifying nitrogen deposition is through "critical load." Critical load is defined as the input of a pollutant below which no detrimental ecological effects occur over the long-term.

Several special-status species (California Ridgway's rail, salt marsh common yellowthroat, Alameda song sparrow, salt-marsh wandering shrew, and salt-marsh harvest mouse) occur in northern coastal salt marsh habitat within a 6-mile radius of the project site. Northern coastal salt marsh is considered a sensitive natural community by the California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB 2019, 2020).

Salt marsh habitat has a high tolerance of nitrogen input because of its open nutrient cycle (Pardo et. al. 2011, pg 3071). Critical load has been estimated to be in the range of 30-40 kilograms of nitrogen per hectare per year (kg N/ha/yr) for early successional salt marsh (Bobbink et. al. 2002, pg 96; Bobbink et. al. 2010, pg 47), and 50-100 kg N/ha/yr for intertidal wetlands and 63-400 kg N/ha/yr for intertidal salt marshes (Pardo et. al. 2011, pg 3059).

According to the most currently available data, background nitrogen deposition at the northern coastal salt marsh for 2011 is estimated to be 7.6 kg N/ha/yr (EnviroAtlas 2019) and for 2012 at 11.4 kg N/ha/yr (CMAQ 2019). Staff acquired shapefiles for Community Multiscale Air Quality (CMAQ) modeling-predicted values of annual total deposition and used data from 2012. From the data, staff used the most conservative values to determine impacts to biological resources.

Conservative modeling using AERMOD, performed by CEC staff for similar facilities in Santa Clara (Vantage Data Center at 651 Matthew Street, SC-1 Data Center at 555 Reed Street, and Laurelwood Data Center at 2201 Laurelwood Drive) at comparable distances (approximately 4 to 5.5 miles) from salt marsh habitat, yielded estimated levels of nitrogen deposition of between 0.01 and 0.09 kg N/ha/yr. Nitrogen deposition attributed to the project combined with the background nitrogen values discussed above would be substantially below critical load for salt-marsh habitats. Thus, nitrogen deposition from the project would have a less than significant impact on the habitat

of special-status species (California Ridgway's rail, salt marsh common yellowthroat, Alameda song sparrow, salt-marsh wandering shrew, and salt-marsh harvest mouse).

Required Mitigation Measures: MM BIO-1 and **MM BIO-2**.

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The project site and surrounding properties have been heavily developed and historically used for industrial component manufacturing and offices. There are no sensitive habitats present on the project site. However, San Tomas Aquino Creek, an open water riparian area, is located along the west boundary of the project site. As stipulated in the SPPE application and the applicant's response to staff's data requests, all of the project improvements and construction and staging activities would occur outside of the San Tomas Aquino creekbed and banks.

Construction

Less Than Significant Impact. Construction activities would occur primarily on the project site, which has been previously developed and is surrounded by industrial and office park uses. As noted previously, construction and tree removal activities would avoid any surface disturbance of the San Tomas Creek corridor. On-site adherence to discharge requirements for the control of solids and pollutants leaving the construction area, as required in the local National Pollution Discharge Elimination System (NPDES) Permit, would ensure that impacts to natural waterways in riparian habitat are avoided. This includes a Storm Water Pollution Prevention Plan and storm water quality best management practices such as directing runoff into bioswales and percolating retention areas (TN 232246). As such, project construction impacts to the riparian habitat associated with the creek would be less than significant.

Operation and Maintenance

Less Than Significant Impact. The implementation of the NPDES requires Low Impact Development-based storm water treatment controls to treat post-construction storm water runoff intended to maintain or restore the site's natural hydrologic functions, maximizing opportunities for infiltration and evapotranspiration, and using storm water as a resource. It also requires proper installation, operation, and maintenance of storm water treatment measures. Impacts from operation and maintenance of the project would be less than those anticipated during construction for storm water.

Northern coastal salt marsh is the only sensitive natural community within 5 miles of the project known to be sensitive to nitrogen deposition. As stated above, salt marsh habitat has a high tolerance of nitrogen input because of its open nutrient cycle (Pardo et. al. 2011, pg 3071) and thus higher critical load in the range of 30-40 kg N/ha/yr (Bobbink et. al. 2002, pg 96; Bobbink et. al. 2010, pg 47) for early successional salt

marsh, and 50-100 kg N/ha/yr for intertidal wetlands and 63-400 kg N/ha/yr for intertial salt marshes (Pardo et. al. 2011, pg 3059). Current background nitrogen deposition at the northern coastal salt marsh for 2012 is estimated to be 11.4 kg N/ha/yr (CMAQ 2019). Since the nitrogen deposition attributed to the project combined with the background nitrogen would be considerably less than the lowermost critical load of 30-40 kg N/ha/yr for salt marsh, impacts from nitrogen deposition would be less than significant for this sensitive natural community.

Required Mitigation Measures: None.

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

There are no federally protected wetlands as defined by Section 404 of the Clean Water Act on the project site. San Tomas Aquino Creek is the nearest body of water under the jurisdiction of the United States Army Corps of Engineers and is the main component of a larger watershed that flows north to Guadalupe Slough eventually draining to South San Francisco Bay. The creek has slow flowing water year round and is contained within an excavated channel with a natural bottom cover consisting of sand, mud, and gravel. A little over 1 mile north from the portion of San Tomas Aquino Creek that borders the project, the creek gradually turns into estuarine waters becoming more influenced by tides and higher ocean salt water content. The nearest estuarine and marine wetlands cover 21.5 acres within Baylands Park just over 2.20 miles north of the project site. These wetlands are adjacent to the deepwater lake and wetlands of Don Edwards San Francisco Bay National Wildlife Refuge.

Construction

Less Than Significant Impact. As noted previously, demolition and construction of the project would avoid any surface disturbance at the nearest water feature to the project site–San Tomas Aquino Creek. On-site adherence to discharge requirements for the control of solids and pollutants leaving the construction area, as required in the local National Pollution Discharge Elimination System (NPDES) authorization, would ensure that impacts to natural waterways are avoided.

Operation and Maintenance

Less Than Significant Impact. Impacts from operation and maintenance of the project would be similar to those anticipated during construction. The project would drain to the existing City of Santa Clara storm drain system and to the permanent site improvements including retention swales to prevent overflow of floodwaters onto adjacent properties, ditches, or waterways.

Required Mitigation Measures: None.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

The project is located in an established urbanized area characterized by office and industrial uses. The site and adjacent properties do not support wildlife species or provide natural areas that could serve as corridors for the movement of wildlife. As noted previously, the adjacent San Tomas Aquino Creek supports a variety of wildlife and potentially hosts Central California Coast Distinct Population Segment (DPS) of Steelhead. However, no project improvements or activities would encroach on the creek or its associated riparian corridor.

Construction

Less Than Significant With Mitigation Incorporated. The project would completely avoid any disturbance to San Tomas Aquino Creek and any steelhead that may use the creek for migration or spawning. **MM BIO-1** and **MM BIO-2** require the applicant to conduct pre-construction surveys of suitable habitat areas (as determined by a qualified biologist) for birds covered by the MBTA and the California Fish and Game codes on the site and vicinity before construction. If bird nests or owl burrows are discovered after the start of construction, appropriate non-disturbance buffers would be established and maintained during these activities until such time as the burrow or nest is determined to not be active. With these measures impacts to avian species covered by the MBTA and Fish and Game codes would be avoided or mitigated to less than significant.

Operation and Maintenance

No Impact. The operation and maintenance of the project would not interfere with the movement of any wildlife.

Required Mitigation Measures: MM BIO-1 and **MM BIO-2**.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The proposal entails development of an industrial data center and associated backup generators on a Planned Industrial (MP)-zoned property. There is no naturally occurring vegetation existing on the project site, as trees surrounding the site are part of the existing ornamental landscape, along with a strip of grassland and trees lining the western boundary that borders San Tomas Creek. There are no other resources on the site that would be subject to local ordinances protecting biological resources. Due to the lack of natural vegetation and habitats on the site, the project would not conflict with any conservation land use goals or policies protecting natural habitats as

mentioned in the City of Santa Clara General Plan. However, there are sections of the city's general plan that protect trees.

Construction

Less Than Significant Impact. Prior to the commencement of demolition activities under a city-issued demoltion permit, a total of 251 trees were on the project site. Two hundred twenty three of these trees are proposed for removal according to the updated Arborist Report and Landscape Plan provided in the applicant's Response to Data Request Set 2 (TN 232246, Attachments BIO DR-60 and 61). The Landscape Plan proposes 236 replacement trees that would be a minimum 36-inch box specimens. The City of Santa Clara found these plans to be consistent with city requirements, and a Tree Removal Permit was issued on January 20, 2020. The preserved and new trees proposed on the Landscape Plan will be a required element of the project as part of the city's Architectural Review process.

Operation and Maintenance

No Impact. Once constructed, there is no indication that operation and maintenance of the project would require the removal of additional trees. However, if removal of trees becomes necessary in the future, the site owner would be required to comply with local policies and ordinances regarding the protection/replacement of trees. Operating the data center and maintaining the buildings and on-site ornamental landscaping would involve levels of intrusion and disturbance similar to or less than that at office and industrial uses in the vicinity. Thus, operation of the project would not conflict with local policies and ordinances protecting biological resources.

Required Mitigation Measures: None.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The project and surrounding area is influenced by the Santa Clara Valley Habitat Plan (SCVHP). The SCVHP is a conservation plan adopted in 2012 for the protection and recovery of resources over a 519,000-acre study area encompassing the majority of land in Santa Clara County. However, the City of Santa Clara is not a plan participant or permitee to the SCVHP. The project site falls outside of the study area of the SCVHP, but the project site is within a 48,464-acre *extended study area* [emphasis added] for Western burrowing owl conservation that includes the northern edge of the county in portions of the cities of San José, Santa Clara, Mountain View, Milpitas, and Sunnyvale. The extended study area was created in recognition that in the 1990s nearly all of the burrowing owl population and breeding pairs in Santa Clara County[3] were concentrated on urban open spaces (airfields, parks and golf courses) and preserves

3 It was estimated that 75 percent of the San Francisco Bay area population of burrowing owl occurred in Santa Clara County (SCVHA 2012, Appendix M, page M-1).

at the southern side of San Francisco Bay in the Don Edwards National Wildlife Refuge and Bayland Park areas. Recovery of the species in Santa Clara Valley depends on concentrating conservation efforts near existing breeding burrowing owl colonies, along with the typical dispersal distances of burrowing owl. It was predicted that burrowing owls would move north of the main study area within 7.5 miles between natal, breeding, and overwintering sites. Thus near-term efforts to stabilize, protect, and better manage established and potential burrowing owl habitat in the Don Edwards and Baylands area was assigned elevated priority in the SCVHP.

Since the project area falls within high potential breeding habitat and is about 1.5 miles from two known and established breeding colonies, there is the possibility of burrowing owl presence on the project site (SCVHA 2012). Other than its inclusion in the extended study area for the protection and revival of the burrowing owl population, the project would not conflict with the underlying land use assumptions and inherent goals and conservation strategies incorporated in the habitat plan.

Construction

No Impact. Although the project site is within the extended study area of the SCVHP for burrowing owl conservation, the land and surrounding properties have been fully urbanized, and do not support the open foraging or burrowing habitats that are listed as focus areas in the San Jose/ Baylands Region in the SCVHP's Burrowing Owl Conservation Strategy (SCVHA 2019, Appendix M, pp. 3-5).

Operation and Maintenance

No Impact. The site is fully urbanized and in the unlikely event that burrowing owls were to establish on the site during operation, these birds would be covered by the MBTA and Fish and Game codes along with the obligate responsibilities of the site owner under these laws.

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5.7 Geology and Soils

This section describes the environmental and regulatory setting and discusses impacts associated with the construction and operation of the project, which for this analysis refers to both the MCDC and the MCBGF, with respect to geology and soils.

GEOLOGY AND SOILS **Would the project:**	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. 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 or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
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 geologic units 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 Section 1803.5.3 of the California Building Code (2010), creating substantial direct or indirect risks to life or property?*	☐	☐	☒	☐
e. 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 waste water?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

*Geology and Soils question (d) reflects the current 2019 California Building Code (CBC), effective January 1, 2020, which is based on the International Building Code (2018).

Environmental criteria established by CEQA Guidelines, Appendix G.

5.7.1 Setting

Analysis of existing data included reviews of publicly available literature, maps, air photos, and documents presented with the application. An online database search was performed to identify previously reported paleontological resources near the project site. The geologic map review of the project area included maps published by the U.S. Geological Survey (Helley and Wesling 1989; Wesling and Helley 1989, and Helley et al. 1994). The literature reviewed included published and unpublished scientific papers. A paleontological record search of the University of California Museum of Paleontology, Berkeley online paleontological database was conducted for the disturbed project areas, including a 10-mile buffer zone surrounding the proposed data center (UCMP 2020).

Paleontological Sensitivity

The potential for paleontological resources to occur in the project area was evaluated using the federal Potential Fossil Yield Classification (PFYC) system developed by the Bureau of Land Management (BLM 2016). Because of its demonstrated usefulness as a resource management tool, the PFYC has been utilized for many years for projects across the country, regardless of land ownership. It is a predictive resource management tool that classifies geologic units based on their likelihood to contain paleontological resources on a scale of 1 (very low potential) to 5 (very high potential) or Unknown. This system is intended to aid in predicting, assessing, and mitigating impacts to paleontological resources. The PFYC ranking system is summarized in **Table 5.7-1**.

TABLE 5.7-1: POTENTIAL FOSSIL YIELD CLASSIFICATION

BLM PFYC Designation	Assignment Criteria Guidelines and Management Summary
1 Very Low Potential	Geologic units are not likely to contain recognizable paleontological resources.
	Units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units.
	Units are Precambrian in age.
	Management concern is usually negligible, and impact mitigation is unnecessary except in rare or isolated circumstances.
2 Low	Geologic units are not likely to contain paleontological resources.
	Field surveys have verified that significant paleontological resources are not present or are very rare.
	Units are generally younger than 10,000 years before present.
	Recent aeolian deposits.
	Sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely.
	Management concern is generally low, and impact mitigation is usually unnecessary except in occasional or isolated circumstances.
3 Moderate Potential	Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence.
	Marine in origin with sporadic known occurrences of paleontological resources.
	Paleontological resources may occur intermittently, but these occurrences are widely scattered.
	The potential for authorized land use to impact a significant paleontological resource is known to be low-to-moderate.

TABLE 5.7-1: POTENTIAL FOSSIL YIELD CLASSIFICATION

BLM PFYC Designation	Assignment Criteria Guidelines and Management Summary
	Management concerns are moderate. Management options could include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Opportunities may exist for hobby collecting. Surface-disturbing activities may require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action and whether the action could affect the paleontological resources.
4 High Potential	Geologic units that are known to contain a high occurrence of paleontological resources.
	Significant paleontological resources have been documented but may vary in occurrence and predictability.
	Surface-disturbing activities may adversely affect paleontological resources.
	Rare or uncommon fossils, including invertebrate (such as soft body preservation) or unusual plant fossils, may be present.
	Illegal collecting activities may impact some areas.
	Management concern is moderate to high depending on the proposed action. A field survey by a qualified paleontologist is often needed to assess local conditions. On-site monitoring or spot- checking may be necessary during land disturbing activities. Avoidance of known paleontological resources may be necessary.
5 Very High Potential	Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources.
	Significant paleontological resources have been documented and occur consistently.
	Paleontological resources are highly susceptible to adverse impacts from surface disturbing activities.
	Unit is frequently the focus of illegal collecting activities.
	Management concern is high to very high. A field survey by a qualified paleontologist is almost always needed and on-site monitoring may be necessary during land use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations should be considered.
U Unknown	Geologic units that cannot receive an informed PFYC assignment.
	Geological units may exhibit features or preservation conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is known.
	Geologic units represented on a map are based on lithologic character or basis of origin, but have not been studied in detail.
	Scientific literature does not exist or does not reveal the nature of paleontological resources.
	Reports of paleontological resources are anecdotal or have not been verified.
	Area or geologic unit is poorly or under-studied.
	BLM staff has not yet been able to assess the nature of the geologic unit.
	Until a provisional assignment is made, geologic units with unknown potential have medium to high management concerns. Field surveys are normally necessary, especially prior to authorizing a ground-disturbing activity.

Source: Summarized and modified from BLM 2016

Regional Geologic Setting

The proposed project is situated in the Southern Coastal Ranges geomorphic province (**Figure 5.7-1**). The division between the Northern and Southern Coastal Ranges is one of convenience. Both provinces contain many elongate ranges and narrow valleys that are approximately parallel to the coast, although the coast trends in a slightly more northerly direction, than the ridges and valleys, except at San Francisco Bay where a pronounced gap separates the two provinces (Norris and Webb 1990). The differences between the two provinces occur because the Northern Ranges lie east of the San Andreas Fault zone, whereas the Southern Ranges predominantly lie to the west (Norris and Webb 1990). The two Ranges have dissimilar basement rocks. The Northern Range and portions of the Southern Range east of the San Andreas Fault zone are underlain by strongly deformed Franciscan subduction complex rocks, and the areas west of the San Andreas Fault zone, in both the Northern Range and Southern Range, are underlain by a strongly deformed granitic-metamorphic complex known as the Salinian block. The basement rock beneath the project site, which lies east of the San Andreas Fault zone consists of Franciscan Complex rocks (Norris and Webb 1990).

Local Geology and Soils

Figure 5.7-2 depicts the surficial geology in the vicinity of the project. The project site is in the Santa Clara Valley, a relatively broad and level alluvial basin, bounded by the San Francisco Bay to the north, the Santa Cruz Mountains to the west and southwest, and the Diablo Mountain Range to the east and southeast. The Santa Clara Valley's basin contains alluvial deposits derived from the Diablo Range and the Santa Cruz Mountains.

The majority of the project site is underlain by Holocene age (less than 11,000 years old) basin deposits (Qhb) (**Figure 5.7-2**). The basin deposits consist primarily of estuarine deposits of the Alameda Formation and younger alluvial fans. Alluvial deposits are interbedded with bay and lacustrine (lake) deposits in the north-central region. The valley sediments were deposited as a series of coalescing alluvial fans by streams that drain the adjacent mountains. These alluvial sediments make up the groundwater aquifers of the area.

Figure 5.7-3 depicts the surficial soil units at and near the project site. Soil types in the area include clay in the low-lying central areas, loam and gravelly loam in the upper portions of the valley, and eroded rocky clay loam in the foothills. The soil at the site is classified as Urbanland and Urbanland-Campbell complex by the U.S. Department of Agriculture (NRCS 2019). The average grade of the valley floor ranges from nearly horizontal to about two percent generally down to the northwest (NRCS 2019; Santa Clara 2011).

The uppermost layer of soil encountered at the site consists of undocumented fill consisting of clayey sand to a depth of two feet below ground surface (bgs). Below the undocumented fill, soil consists of hard lean clays with some loose to dense layers of silty,

clayey, and poorly graded sands. An approximately five-foot thick sandy silt layer is approximately nine feet bgs (Mission College 2019a).

Expansive soil can undergo volume changes with changes in moisture content. Specifically, when wetted during the rainy season expansive soil tends to swell, and when dried during the summer months the material shrinks. The project site is located on expansive soil as defined in Section 1803.5.3 of the CBC (Mission College 2019a). However, expansive soil can be mitigated through removal or mixing with non-expansive soil.

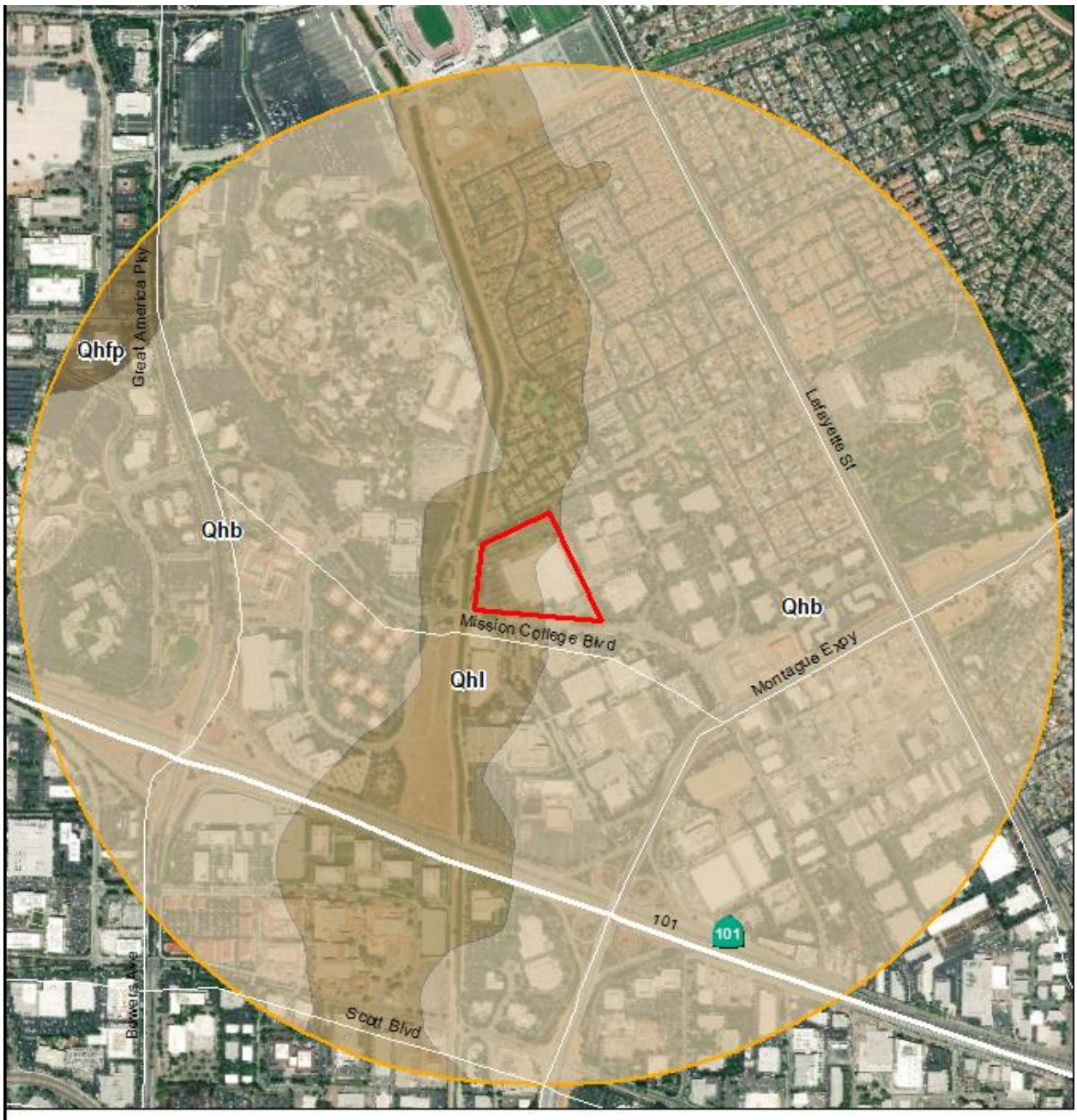
Holocene age sediments in this area have low potential to yield fossil resources or to contain significant nonrenewable paleontological resources. However, these recent sediments overlie older, Pleistocene age sediments that have a high-potential to contain paleontological resources (Mission College 2019a). These older sediments, often found at depths of ten feet or more, have yielded the fossil remains of plants and extinct terrestrial Pleistocene vertebrates. Ground disturbing activities of ten feet or more have the potential to impact undiscovered paleontological resources in older Pleistocene sediments (Santa Clara 2010). Excavation for utilities would extend to depths of up to 12 feet below the new base elevation and drilling of auger cast foundation piles will extend to roughly 30 feet below the new base elevation (Mission College 2020a).

Figure 5.7-1
Geomorphic Provinces

○ City/Town/Populated Place

E-Eureka	F-Fresno	N-Needles
R- Redding	B-Bakersfield	K-Kelso
S-Sacramento	SB-Santa Barbara	SD-San Diego
SF-San Francisco	LA-Los Angeles	
M-Monterey	PS-Palm Springs	

Sources: California Department of Conservation, California Geological Survey, 2002



Qhb: Floodbasin Deposits (Holocene)
Qhfp: Floodplain Deposits (Holocene)
Qhl: Natural Levee Deposits (Holocene)

Project Boundary
1 Mile Radius

Figure 5.7-2
Surficial Geology

0 1,000 2,000
Feet

Sources: USGS; 2018 ESRI

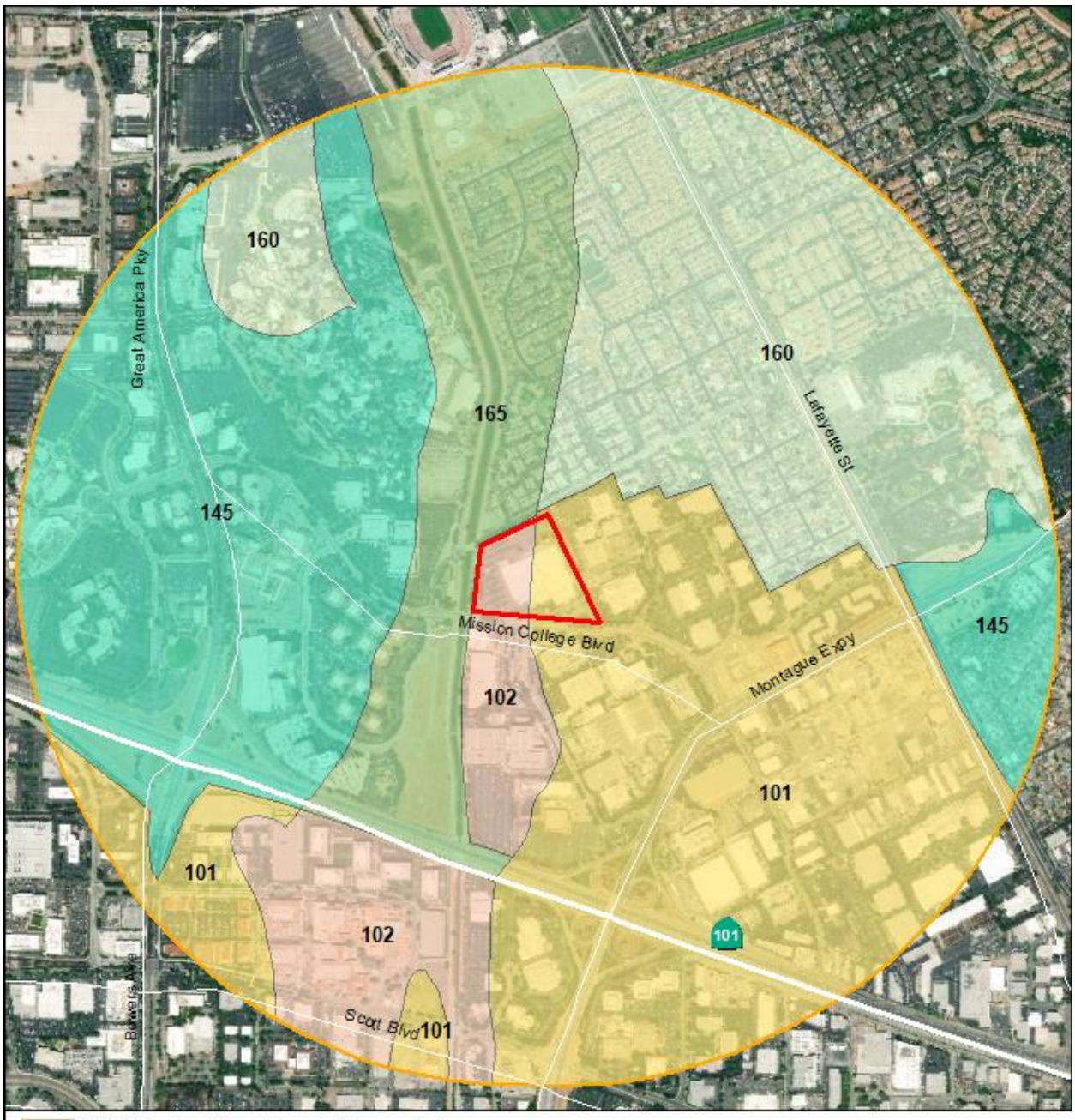


Figure 5.7-3
Surface Soil Map

There are no unique geologic features on or adjacent to the project site. The topography of the project site is relatively flat with a slight downward slope to the northeast. The elevation across the site ranges from 19 to 25 feet above the North American Vertical Datum (NAVD88) with an average of about 20 feet (Mission College 2019a). Erosion hazards are limited and there are no landslide hazards.

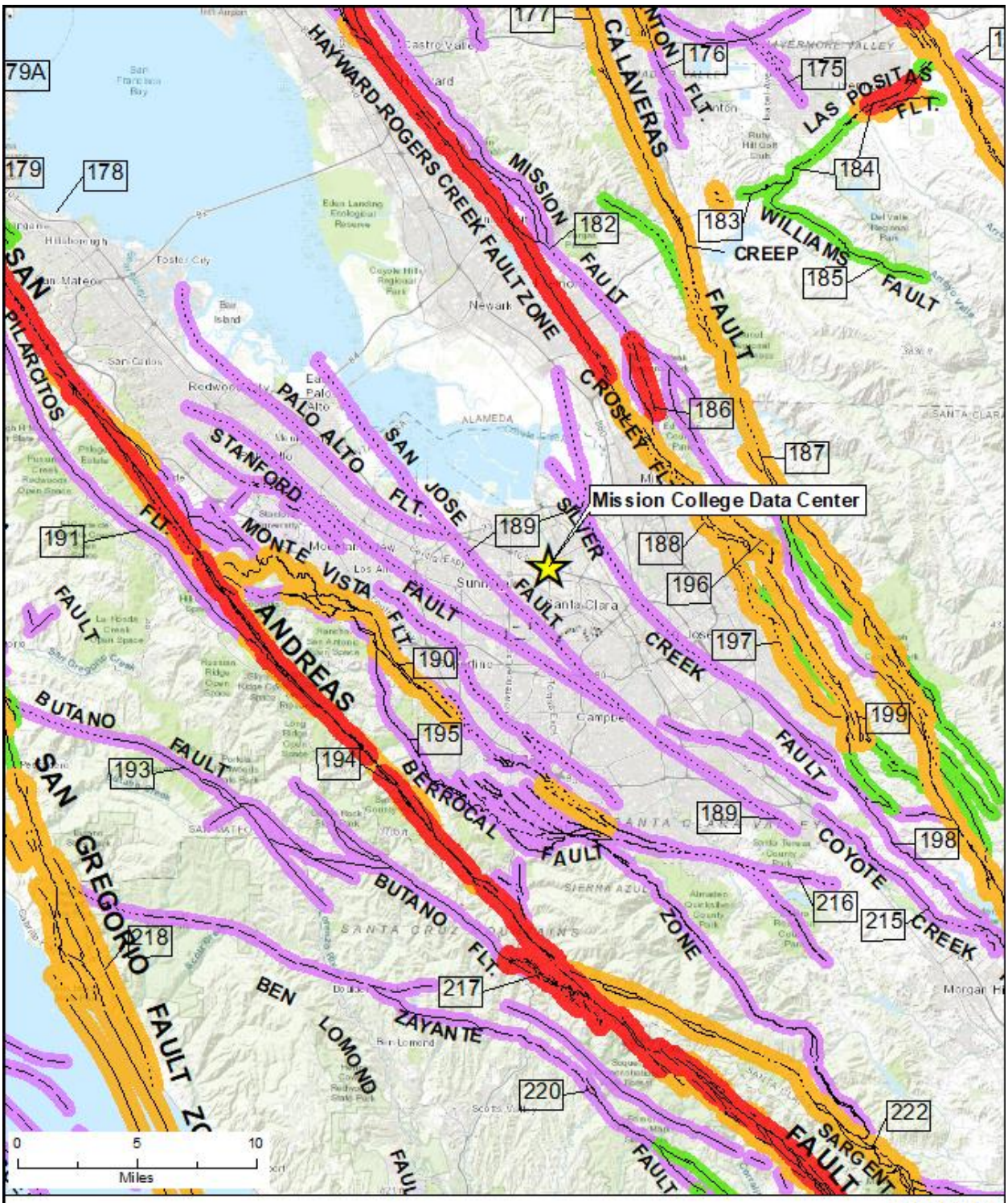
Groundwater

Depth to groundwater in the area is approximately 8 to 11 feet bgs. Fluctuations in groundwater levels are common due to seasonal fluctuation, underground drainage patterns, regional fluctuations, and other factors (Mission College 2019a).

Seismicity and Seismic Hazards

The significant earthquakes that occur in the Bay Area are generally associated with crustal movement along well-defined active fault zones of the San Andreas Fault system, which regionally trend in a northwesterly direction (**Figure 5.7-4**). Three of the major earthquake faults (the San Andreas Fault, the Hayward-Rogers Creek Fault, and the Calaveras Fault) that comprise the San Andreas Fault system extend through the Bay Area (CGS 2015). The Mission College Data Center site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone (known formerly as a Special Studies Zone), and there are no known active faults within the City limits of Santa Clara (Mission College 2019a).

Figure 5.7-4 identifies the regional earthquake faults in the project vicinity. While seismologists cannot predict earthquake events, the U.S. Geological Survey's Working Group on California Earthquake Probabilities estimates there is a 72 percent chance of at least one magnitude 6.7 earthquake occurring in the Bay Area region between 2002 and 2032 (CGS 2010). A more accurate estimate would be made as part of the final geotechnical report required by the building code (CBC 2019). Higher levels of shaking and damage would be expected for earthquakes occurring at closer distances. The faults considered capable of generating significant earthquakes in the area are generally associated with the well-defined areas of crustal movement, which trend northwesterly. The three major faults in the region are the Calaveras Fault (approximately 9.9 miles east of the site), the San Andreas Fault (approximately 11.3 miles west of the site), and the Hayward-Rogers Creek Fault (approximately 6.3 miles north of the site). Ground shaking at the project site is predicted to be strong to very strong as determined by the Association of Bay Area Governments (Mission College 2019a). Structural design of facilities in California is required to incorporate design features to ensure public safety if a seismic event generates sufficient ground motion to impact the structural integrity of the facility in accordance with California Building Code (CBC 2019).



Fault Classification (Based on most recent activity)

- Historic
- Holocene
- Late Quaternary
- Quaternary

Sources: California Department of Conservation 2010, ESRI

Figure 5.7-4
Regional Fault

Loose unsaturated sandy soils tend to settle during strong seismic shaking. However, the soils encountered below the few feet of undocumented fill covering the site consists of hard lean clays with some loose to dense layers of silty, clayey, and poorly graded sands that may not be susceptible to significant differential seismic settlement. However, an approximately five-foot thick sandy silt layer is approximately nine feet bgs (Mission College 2019a). Therefore, there exists some potential for differential seismic settlement affecting the proposed project. Pursuant to APM PD GEO-1, the project owner will perform an additional geotechnical investigation to provide data that will produce a better understanding of the settlement potential across the site. This data will be provided in a report to the city and will be reviewed by the city's building standards division to ensure that the project complies with all CBC requirements.

Liquefaction

During strong ground shaking, loose, saturated, cohesionless soils can experience a temporary loss of shear strength and act like a fluid. This phenomenon is known as liquefaction. Liquefaction depends on the depth to water, grain size distribution, relative soil density, degree of saturation, and intensity and duration of the earthquake (Youd et al. 2001). The potential hazard associated with liquefaction is seismically induced settlement. The site is mapped within a State of California Seismic Hazard Zone for liquefaction. Areas mapped for this hazard either have been impacted historically by liquefaction or they display geologic or groundwater conditions conducive to liquefaction. Potentially liquefiable layers have been observed to depths of at least 50 feet below grade (Mission College 2019b, Geotechnical Investigation) and groundwater was encountered at depths ranging from approximately 8 to 11 feet bgs (Mission College 2019a). Proposed structures would be designed and constructed to account for this potential for liquefaction in accordance with the California Building Code (CBC 2019).

Lateral Spreading

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or "free" face such as an open body of water, channel, or excavation. In soils, this movement is generally due to failure along a weak plane and may often be associated with liquefaction. As cracks develop within the weakened material, blocks of soil displace laterally towards the open face. Cracking and lateral movement may gradually propagate away from the face as blocks continue to break free. San Tomas Aquino Creek is adjacent to the project site to the west. The geotechnical investigation completed for the site concluded that the western portion of the site adjacent to the creek could be susceptible to lateral spreading (Mission College 2019b).

Regulatory Background

The project would be required to obtain appropriate building permits from the city of Santa Clara. The issuance of the building permits and oversight provided by the city of Santa Clara would ensure that the project complies with the applicable building codes.

Federal

There are no federal regulations related to geology and soils and paleontological resources that apply to this project.

State

Alquist-Priolo Earthquake Fault Zoning Act. The Alquist-Priolo Earthquake Fault Zoning Act was passed following the 1971 San Fernando earthquake. The act regulates development in California near known active faults due to hazards associated with surface fault ruptures. Alquist-Priolo maps are distributed to affected cities, counties, and state agencies for their use in planning and controlling new construction. Areas within an Alquist-Priolo Earthquake Fault Zone require special studies to evaluate the potential for surface rupture to ensure that no structures intended for human occupancy are constructed across an active fault.

Seismic Hazards Mapping Act. The Seismic Hazards Mapping Act (SHMA) was passed in 1990 following the 1989 Loma Prieta earthquake. The SHMA directs the California Geological Survey (CGS) to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. CGS has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, landslides, and ground shaking, including the central San Francisco Bay Area. The SHMA requires that agencies only approve projects in seismic hazard zones following site-specific geotechnical investigations to determine if the seismic hazard is present and identify measures to reduce earthquake-related hazards.

California Building Code. The California Building Code (CBC) prescribes standards for constructing safer buildings. The CBC contains provisions for earthquake safety based on factors including occupancy type, soil and rock profile, ground strength, and distance to seismic sources. The CBC requires that a site-specific geotechnical investigation report be prepared for most development projects to evaluate seismic and geologic conditions, such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability. The CBC is updated every three years; the current version is the 2019 CBC.

California Division of Occupational Safety and Health Regulations. Excavation, shoring, and trenching activities during construction are subject to occupational safety standards for stabilization by the California Division of Occupational Safety and Health (Cal/OSHA) under Title 8 of the California Code of Regulations and Excavation Rules. These regulations are intended to minimize the potential for instability and collapse that could injure construction workers on the site.

State Paleontological Laws, Ordinances, Regulations, and Standards. Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. They range from mammoth and dinosaur bones to impressions of ancient animals and plants, trace remains, and microfossils. These are

valued for the information they yield about the history of the earth and its past ecological settings. The California Public Resources Code (Section 5097.5) specifies that unauthorized removal of a paleontological resource is a misdemeanor.

The California Environmental Quality Act (CEQA) encourages the protection of all aspects of the environment by requiring state and local agencies to prepare multidisciplinary analyses of the environmental impacts of a project and to make decisions based on the findings of those analyses. CEQA includes, in its definition of historical resources, any object or site that "has yielded, or may be likely to yield, information important in prehistory" (California Code Regulations, title 14, § 15064.5(a)(3)(D)), which is typically interpreted by professional scientists as including fossil materials and other paleontological resources. More specifically, destruction of a "unique paleontological resource or site or unique geologic feature" may be a significant impact under CEQA (CEQA Guidelines Appendix G.VII. (f)).

Local

Local Building Code Amendments. Staff reviewed the city of Santa Clara General Plan (Santa Clara 2010) for amendments to the CBC 2019. The General Plan indicates that building redevelopment design and construction at the site shall be completed in conformance with the recommendations of a design-level geotechnical investigation, which will be included in a report to the city. The report shall be reviewed and approved by the city of Santa Clara's Building Division as part of the building permit review and issuance process. The building shall meet the requirements of applicable Building and Fire Codes, including the 2019 California Building Code, as adopted or updated by the city. The project shall be designed to withstand potential geologic hazards identified on the site and the project shall be designed to reduce the risk to life or property to the extent feasible and in compliance with the Building Code.

Local Paleontological Regulations. Staff reviewed the city of Santa Clara General Plan (Santa Clara 2010) for provisions relevant to paleontological resources. Section 5.6.3 of the general plan identifies protection of paleontological resources as a goal of the city and policies 5.6.3-P1 through P6 outline how the protection of paleontological resources would be achieved.

- 5.6.3-G1 Protection and preservation of cultural resources, as well as archaeological and paleontological sites.
- 5.6.3-G2 Appropriate mitigation if human remains, archaeological resources or paleontological resources are discovered during construction activities.
- 5.6.3-P1 Require that new development avoid or reduce potential impacts to archaeological, paleontological and cultural resources.
- 5.6.3-P2 Encourage salvage and preservation of scientifically valuable paleontological or archaeological materials.

- 5.6.3-P3 Consult with California Native American tribes prior to considering amendments to the city's General Plan.
- 5.6.3-P4 Require that a qualified paleontologist/archaeologist monitor all grading and/or excavation if there is a potential to affect archeological or paleontological resources, including sites within 500 feet of natural water courses and in the Old Quad neighborhood.
- 5.6.3-P5 In the event that archaeological/paleontological resources are discovered, require that work be suspended until the significance of the find and recommended actions are determined by a qualified archaeologist/paleontologist.
- 5.6.3-P6 In the event that human remains are discovered, work with the appropriate Native American representative and follow the procedures set forth in State law.

5.7.2 Applicant Proposed Measures

PD GEO-1: In order to ensure the project design conforms to the requirements of a final geotechnical engineering investigation and California and local building standards and codes, the following is proposed as mitigation incorporated into the project. Incorporation will ensure seismic hazards are reduced to less than significant levels.

- To avoid or minimize potential damage from seismic shaking, the project would be built using standard engineering and seismic safety design techniques. Building redevelopment design and construction at the site shall be completed in conformance with the recommendations of a design-level geotechnical investigation, which will be included in a report to the City. The report shall be reviewed and approved by the City of Santa Clara's Building Division as part of the building permit review and issuance process. The building shall meet the requirements of applicable Building and Fire Codes, including the 2016 California Building Code, as adopted or updated by the City. The project shall be designed to withstand potential geologic hazards identified on the site and the project shall be designed to reduce the risk to life or property to the extent feasible and in compliance with the Building Code.

PD GEO-2: The project proposes to implement the following measures to ensure the project's erosion impacts are less than significant:

- Because this project involves a land disturbance of more than one acre, the project is required to submit a Notice of Intent to the State Water Resources Control Board and to prepare a Storm Water Pollution Prevention Plan (SWPPP) for controlling storm water discharges associated with construction activity.
- This project will be required to prepare and submit an Erosion Control Plan with the Grading and Drainage Plan for review and approval by the Department of Public Works.

- All excavation and grading work will be scheduled in dry weather months or construction sites will be weatherized.
- Stockpiles and excavated soils will be covered with secured tarps or plastic sheeting.
- Ditches will be installed, if necessary, to divert runoff around excavations and graded areas.

5.7.3 Environmental Impacts and Mitigation Measures

a. Would the project 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 or based on other substantial evidence of a known fault? Refer *to Division of Mines and Geology Special Publication 42.*

Construction

Less than Significant Impact. The probability that demolition followed by construction of the proposed project would have an impact on the risk of loss, injury, or death involving rupture of an earthquake fault during demolition or construction is remote. The project site is located within the seismically active San Francisco Bay region, and the nearest historically active fault, the Hayward-Rogers Creek Fault, is approximately 6.3 miles from the project site (**Figure 5.7-4**). No active or potentially active faults are known to pass directly beneath the site. Several potentially active faults have been mapped outside of the general project area, the closest being the Silver Creek fault, which is mapped approximately 2.1 miles southwest of the proposed project site (**Figure 5.7-4**). Due to the distance of faults from the site and the absence of known faults within or near the site, development of the project would not expose people or buildings to known risks of fault rupture. Given this, the impact would be less than significant.

Operation and Maintenance

No Impact. The probability that operation or maintenance of the proposed project would have an impact on the risk of loss, injury, or death involving rupture of an earthquake fault during operation is remote. There are no mapped Alquist-Priolo Special Studies Zones for active faults crossing the project site (**Figure 5.7-4**). As described above, the zone of damage is limited to a relatively narrow area along either side of the fault. Therefore, no impacts related to fault rupture would occur.

Required Mitigation Measures: None

ii) Strong seismic ground shaking?

Construction

Less Than Significant Impact. Earthquakes along several nearby active faults in the region could cause moderate to strong ground shaking at the site. The intensity of ground motion and the damage done by ground shaking would depend on the characteristics of the generating fault, distance to the fault and rupture zone, earthquake magnitude, earthquake duration, and site-specific geologic conditions. The design of the project, including the building foundations, would assess potential impacts of strong seismic ground shaking.

Seismic hazards would be minimized by conformance to the seismic design criteria of the 2019 CBC and local amendments (Santa Clara 2010). A project-specific geotechnical engineering report would be provided to the city Building Official for review and approval prior to issuance of a building permit. With implementation of the seismic design guidelines per the CBC (CBC 2019), as well as the anticipated project-specific recommendations in the final geotechnical engineering report, the project would not expose people or property, directly or indirectly, to significant impacts associated with geologic or seismic ground shaking, and the project shall meet the design requirements of the current CBC.

Operation and Maintenance

Less Than Significant Impact. During operation and maintenance of the proposed project, the project facility would be subject to moderate to strong seismic ground shaking. However, with implementation of the most recent seismic design guidelines per the CBC (CBC 2019) and local amendments (Santa Clara 2010), the project would not expose people or property, directly or indirectly, to significant impacts associated with geologic or seismic ground shaking. Therefore, risks to people or structures from strong seismic ground-shaking would continue to be less than significant.

Required Mitigation Measures: None**.**

iii) Seismic-related ground failure, including liquefaction?

Construction

Less Than Significant Impact. The site is located within a state-designated Liquefaction Hazard Zone. The likely consequence of potential liquefaction at the site would be settlement. Total ground surface settlements on the order of 0.5 – 0.66 inches may result from liquefaction or ground softening after a seismic event (Mission College 2019b).

As previously mentioned, the project would be constructed in compliance with the 2019 CBC and local amendments, including all applicable seismic standards for

structures. Compliance with the 2019 CBC and local amendments reduces potential risks associated with settlement from seismically induced liquefaction.

Operation and Maintenance

Less Than Significant Impact. During operation and maintenance of the proposed project, the project facility would be subject to moderate to strong seismic ground shaking. However, with implementation of seismic design guidelines per the CBC (CBC 2019) and local amendments (Santa Clara 2010), the project would not expose people or property, directly or indirectly, to significant impacts associated with geologic or seismic ground shaking, including ground failure, liquefaction, or seismically induced subsidence. Therefore, risks to people or structures from strong seismic ground-shaking would continue to be less than significant.

Required Mitigation Measures: None**.**

iv) Landslides?

Construction

No Impact. There would be no impact from landslides. The proposed project site is located on very mildly sloping terrain and is not located in any of the areas subject to landslides as identified in the city of Santa Clara General Plan (2011). Grading of the substation expansion would not create steep slopes and construction of the proposed project would not cause a landslide.

Operation and Maintenance

No Impact. Operation and maintenance activities would not change materially from existing activities and would not include construction or grading of new slopes. For these reasons, and because the project components are not located in areas subject to landslides as identified in the city of Santa Clara General Plan 2010-2035 (Santa Clara 2011), no impact would occur.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Construction

Less Than Significant Impact. Construction activities associated with the project including excavation, trenching, and grading may temporarily increase sedimentation and erosion by exposing soils to wind and runoff until construction is complete and new vegetation is established. As discussed in **Section 5.10 Hydrology and Water Quality**, the project would be subject to construction-related storm water permit requirements. Prior to ground-disturbing construction activity, the project would have to comply with the Construction General Permit, which includes filing a Notice of Intent with the State Water Resources Control Board, coordinating with the city, and preparing and implementing a SWPPP. The SWPPP would include best management

practices for storm water quality control, including soil stabilization practices, sediment control practices, and wind erosion control practices. When construction is complete, the project would file a Notice of Termination with the San Francisco Bay RWQCB, documenting that all elements to the SWPPP have been implemented (Jacobs 2019a).

By complying with permits obtained for construction of this project, runoff from the project site would not violate the applicable waste discharge requirements or otherwise contribute to the degradation of storm water runoff quality. Therefore, impacts related to erosion and loss of topsoil would be less than significant and no mitigation is required.

Operation and Maintenance

Less Than Significant Impact. Surface water runoff from the facility is not expected to impact soil erosion or cause the loss of topsoil during project operation. Occasional minor surface disturbance may continue to be required during maintenance activities but such disturbance would be temporary and likely small. Continuous operation and maintenance work would not result in increased erosion or topsoil loss and therefore, no significant impact associated with erosion or loss of topsoil would occur.

Required Mitigation Measures: None.

c. Would the project be located on geologic units 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?

Construction

Less Than Significant Impact. Lateral spreading is a type of ground failure related to liquefaction. It consists of the horizontal displacement of flat-lying alluvial material toward an open face, such as the steep bank of a stream channel or slopes. Lateral spreading appears possible for the western portion of the site due to its proximity to San Tomas Aquino Creek (Mission College 2019a). Should the final geotechnical investigation indicate that lateral spreading represents a potential foundation stability issue then one way to reduce the potential impact would the construction of a shear key of improved soil between the building and creek channel to the west (Mission College 2019b).

A project-specific geotechnical engineering investigation would be conducted prior to final design, which would incorporate project design features needed to address potential lateral spreading. Both the final geotechnical engineering report and final project design documents would be provided to the city's building official for review and approval prior to issuance of a building permit. With implementation of design guidelines per the California Building Code (CBC 2019) as well as the anticipated project-specific design recommendations in the final geotechnical engineering report,

the project would not expose people or property, directly or indirectly, to unstable geologic or soil units.

Based on the site-specific geotechnical report, subsurface conditions at the project site are generally stable with a potential for minor settlement (up to 1.75 inches of static settlement and 0.66 inches of seismic settlement) (Mission College 2019b). The project would be designed and constructed in accordance with standard engineering safety techniques and in conformance with the requirements of applicable current CBC (CBC 2019) and local amendments (Santa Clara 2010). The project would not change or exacerbate the geologic conditions of the project area and the project would not expose people or property, directly or indirectly, to unstable geologic or soil units.

Operation and Maintenance

Less Than Significant Impact. Operation and maintenance activities would not materially change the surface runoff or geotechnical characteristics of the material beneath the project facilities. Thus, operation and maintenance activities would not introduce new soil stability hazards. Occasional minor surface disturbance may continue to be required during maintenance activities but such disturbance would be temporary and small. The project would not expose people or property, directly or indirectly, to unstable geologic or soil units.

Required Mitigation Measures: None.

d. Would the project be located on 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?

Construction

Less Than Significant Impact. As discussed above in section **5.7.1 Setting**, expansive soil behavior is a condition where clay soils react to changes in moisture content by expanding or contracting. Poorly-drained soils have greater shrink-swell potential. Highly expansive soils blanket the site (Mission College 2019b). This condition can be eliminated by ensuring slabs-on-grade have sufficient reinforcement and are supported by a layer of non-expansive soil, along with limiting moisture changes in the near-surface soils, among other design criteria. The project-specific final geotechnical engineering report along with the final project design would address, as needed, any potential issues arising from expansive soils. Both the geotechnical engineering report and final project design documents would be provided to the city's building official for review and approval prior to issuance of a building permit. With implementation of design guidelines per the California Building Code (CBC 2019) and local amendments, the project would not create substantial direct or indirect risks to life or property.

Operation and Maintenance

No Impact. Operation and maintenance activities would not change materially the surface runoff or geotechnical characteristics of the material beneath the project facilities. Thus, operation and maintenance activities would not introduce new soil stability hazards. Occasional minor surface disturbance may continue to be required during maintenance activities, but such disturbance would be temporary and small. The project would not expose people or property, directly or indirectly, to unstable geologic or soil units.

Required Mitigation Measures: None.

e. Would the project 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?

Construction

No Impact. The project would connect to an existing city-provided sanitary sewer connection and would not require septic tanks (Mission College 2019a). Therefore, there would be no impact to soils as a result of sanitary waste disposal from the project during construction.

Operation and Maintenance

No Impact. The project would connect to an existing City-provided sanitary sewer connection and would not require septic tanks (Mission College 2019a). Therefore, there would be no impact to soils as a result of sanitary waste disposal from the project during operation and maintenance.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Construction

Less Than Significant With Mitigation Incorporated. The level of paleontological sensitivity at the project site is considered to be high (Mission College 2019a). The project site is located in the Santa Clara Valley, an area known to have scientifically significant paleontological resources. However, these fossil discoveries may be widespread or intermittent. Surficial sediment has been mapped as Holocene (11,700 years before present) and paleontological evidence indicates that Pleistocene (2.6 million to 11,700 years before present) sediments may also be present at or near the surface. Five fossil sites have been found at or near the ground surface within two miles of the project site, especially along stream beds. However, the general area has been extensively developed over the last 50 years as part of the technology research and development area known as Silicon Valley. The site has already been disturbed by prior, modern human occupation.

The potential to disturb paleontological resources would occur during the construction activities requiring earth moving, such as grading, trenching for utilities, excavation for foundations, and installation of support structures where native soil would be disturbed. Based on the ground disturbance necessary to complete the project components, there is a limited potential for adverse impacts to scientifically significant paleontological resources of high sensitivity (PFYC 4). Ground disturbing activities of ten feet or more below existing grade have the potential to impact undiscovered paleontological resources (Santa Clara 2010), and ground disturbing activities reaching depths up to 28-feet below existing grade (30 feet below the new grade) are planned (Mission College 2019a).

Staff-proposed mitigation measure (MM) **GEO-1,** discussed below and agreed to by the applicant (Mission College 2020c), would require the project to implement a Worker Environmental Awareness Training Program (WEAP). The WEAP would provide training to construction personnel regarding proper procedures (including identification and notification) in the event fossil materials are encountered during construction. **MM GEO-1** would ensure that staff working at the site would contact the appropriate technical expert, who would then be able to determine the significance of the paleontological resource, and properly salvage that resource. Therefore, with implementation of **MM GEO-1** the project's impact would be less than significant.

Operation and Maintenance

No Impact. There is no potential to disturb paleontological resources during operations because there would be no earth-moving activities required for operations. Occasional minor surface disturbance may continue to be required during maintenance activities, but such disturbance would be temporary, small and most likely limited to disturbance of fill. There would be no impact to paleontological resources.

Required Mitigation Measures:

MM GEO-1: Implement a Worker Environmental Awareness Training Program that would provide training to construction personnel regarding proper procedures (including identification and notification) in the event fossil materials are encountered during construction. If a fossil is found and determined by the approved paleontologist to be significant and avoidance is not feasible, the qualified paleontologist shall develop and implement an excavation and salvage plan in accordance with Society of Vertebrate Paleontology standards. Construction work in these areas shall be halted or diverted to allow recovery of fossil remains in a timely manner. Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be cleaned, repaired, sorted, and cataloged. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall then be deposited in a scientific institution with paleontological collections. A final Paleontological Mitigation Plan Report shall be prepared that outlines the results of the mitigation program. The city shall be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented.

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