



# CORDILLERAS MENTAL HEALTH CENTER REPLACEMENT PROJECT

## DRAFT ENVIRONMENTAL IMPACT REPORT



NOVEMBER 2019

STATE CLEARINGHOUSE #2015072003





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**Cordilleras Health System  
Replacement Project  
Draft Environmental Impact Report**

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**November 2019**

**San Mateo County Manager's Office  
Project Development Unit**

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November 2019



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**CORDILLERAS HEALTH SYSTEM  
REPLACEMENT PROJECT  
ENVIRONMENTAL IMPACT REPORT**

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**ACRONYMS, ABBREVIATIONS, AND SYMBOLS**

<b>Acronym / Symbol</b>	<b>Full Phrase or Description</b>
ABAG	Association of Bay Area Governments
ACM	Asbestos Containing Material
ATCM	Airborne Toxic Control Measures
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BHRS	San Mateo County Behavioral Health and Recovery Services
BMP	Best Management Practices
BTU	British Thermal Units
CAAQS	California Ambient Air Quality Standards
CAP	Climate Action Plan
CARB	California Air Resources Board
C/CAG	City / County Association of Governments (San Mateo County)
CCR	California Code of Regulations
CalEEMOD	California Emissions Estimator Model
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
CMHC	Cordilleras Mental Health Center
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CRHR	California Register of Historic Resources
CRPR	California Rare Plant Ranked
dB	Decibel
DBH	Diameter at Breast Height

<b>Acronym / Symbol</b>	<b>Full Phrase or Description</b>
DPM	Diesel Particulate Matter
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FEMA	Federal Management Agency
FESA	Federal Endangered Species Act
GHG	Greenhouse Gas
gsf	Gross Square Feet
GVWR	Gross Vehicle Weight Rating
GWP	Global Warming Potential
HCP	Habitat Conservation Plan
HFC	Hydrofluorocarbons
H <sub>2</sub> S	Hydrogen Sulfide
hp	Horsepower
HVAC	Heating, Vacuum, and Air Conditioning
Hz	Hertz
ITE	Institute of Transportation Engineers
LBP	Lead Based Paint
Ldn	Day-Night Noise Level
LEED	Leadership in Energy and Environmental Design
Leq	Equivalent Noise Level (Hourly)
MBTA	Federal Migratory Bird Treaty Act
MHRC	Mental Health Rehabilitation Center
MTC	Metropolitan Transportation Commission
MTCO <sub>2e</sub>	Million Metric Tons of CO <sub>2</sub> Equivalents
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NO <sub>x</sub>	Oxides of Nitrogen
NO <sub>2</sub>	Nitrogen Dioxide
NPPA	California Native Plant Protection Act
NPDES	National Pollutant Discharge Elimination System

<b>Acronym / Symbol</b>	<b>Full Phrase or Description</b>
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
OHP	Office Historic Preservation
O <sub>3</sub>	Ozone
PDU	Project Development Unit
PFC	Perfluorocarbons
PM	Particulate Matter
PRC	Public Resources Code
PV	Photo Voltaic
RCRA	Resource Conservation and Recovery Act
RM	Resource Management
ROG	Reactive Organic Gases
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SCH	State Clearinghouse
SCS	Sustainable Communities Strategy
SFBAAB	San Francisco Bay Area Air Basin
SIP	State Implementation Plan
SF <sub>6</sub>	Sulfur Hexafluoride
SLF	Sacred Lands File
SO <sub>x</sub>	Oxides of Sulfur
SO <sub>2</sub>	Sulfur Dioxide
SWPPP	Storm Water Pollution Prevention Plan
TAC	Toxic Air Contaminants
TAZ	Traffic Analysis Zone
TCR	Tribal Cultural Resources
TDM	Transportation Demand Management
TIA	Transportation Impact Analysis
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds



## SUMMARY

### S.1 PROJECT DESCRIPTION

San Mateo County has prepared this Environmental Impact Report (EIR) to evaluate the potentially significant environmental impacts that may result from the construction and operation of its proposed Cordilleras Health System Replacement Project. The proposed project would demolish and replace the existing Cordilleras Mental Health Center (CMHC) with a new facility.

The CMHC is located in unincorporated San Mateo County off Edmonds Road near San Carlos. The CMHC building was constructed in 1952 as a tuberculosis hospital. The hospital closed and was repurposed in 1978 for its current use as a psychiatric treatment center.

At 67 years old, the current building is deteriorating, maintained at considerable annual expense, and has deferred maintenance and upgrade needs. The existing facility does not meet current safety standards and is not consistent with current codes and regulations. The large institutional structure does not support current treatment practices and support services that are effective in promoting recovery for people who have serious mental illnesses. Additionally, the current design does not meet the requirements for federal reimbursement.

The proposed project would replace the existing building with four licensed locked 16-bed buildings and one licensed unlocked 57-bed building. Overall the capacity of the CMHC would be increased from 117 to 121 beds. Staffing levels would be increased from 89 to 107 full-time equivalents to accommodate the increase in facility capacity and provide higher staff to patient ratios consistent with current best practices for mental health care.

### S.2 PROJECT IMPACTS AND MITIGATION

Consistent with the California Environmental Quality Act (CEQA) and the CEQA Guidelines, this EIR focuses on the potentially significant direct and indirect impacts that could result from implementation of the proposed project. Impacts that were determined to be less than significant due to absence of the evaluated resource or the characteristics of the proposed activity include aesthetics, agricultural and forest resources, cultural resources, energy, land use and planning, mineral resources, population and housing, public services, recreation, and tribal resources. These impacts are discussed in EIR section 14.4. The EIR impact analysis evaluates in detail potential impacts to air quality, biological resources, climate change/energy, geology, hazards and hazardous materials, hydrology, noise, traffic, and utilities. This EIR identifies that the proposed Cordilleras Health System Replacement Project could result in potentially significant environmental impacts as summarized in Table S-1.

Table S-1 Summary of Project Impacts and Mitigation Measures	
<i>Air Quality</i>	
<b>Impact AIR-1:</b> Project construction could generate emissions of diesel particulate matter (DPM) that could pose an adverse health risk to on-site receptors housed in the existing	<b>Mitigation Measure AIR-1:</b> To reduce potential adverse health risks associated with exposure to PM <sub>2.5</sub> emissions, including DPM emissions, generated during project construction activities, the County and/or its designated contractors, contractor's representatives, or other appropriate personnel shall apply the following construction equipment restrictions to the proposed project:

<b>Table S-1 Summary of Project Impacts and Mitigation Measures</b>	
<p>Cordilleras Mental Health Center and Canyon Oaks Youth Center.</p> <p><b>Potentially Significant Impact</b></p>	<ul style="list-style-type: none"> <li>• Utilize on-site electrical hook-ups instead of diesel-powered equipment (e.g., diesel generators) to the maximum extent feasible.</li> <li>• All construction equipment with a rated power-output of 50 horsepower or greater shall meet U.S. EPA Tier III Emissions Standards.</li> </ul> <p><b>Less than Significant with Mitigation Incorporated</b></p>
<b>Biology</b>	
<p><b>Impact BIO-1:</b> Construction activities could impact sensitive habitat in adjacent areas.</p> <p><b>Potentially Significant Impact</b></p>	<p><b>Mitigation Measure BIO-1:</b> <i>Worker Education and Installation of Environmentally Sensitive Habitat Fencing.</i></p> <p><b>Measure BIO-1a:</b> A biologist knowledgeable about site habitats, species and mitigation requirements shall provide environmental training to construction workers prior to the start of vegetation removal in Phase 1, prior to foundation construction in Phase 2, and prior to landscape installation in Phase 3-4. The training will include:</p> <ul style="list-style-type: none"> <li>• a brief presentation to explain biological resources concerns to contractors, their employees, and any other personnel involved in project construction</li> <li>• a description of relevant special-status species, nesting birds, and bats along with their habitat needs as they pertain to the project;</li> <li>• a report of the occurrence of these species in the project vicinity, as applicable;</li> <li>• an explanation of the status of these species and their protection under the federal and state regulations;</li> <li>• a list of measures being taken to reduce potential impacts to natural resources during project construction and implementation; and</li> <li>• instructions if a special-status species is found onsite.</li> </ul> <p>A fact sheet conveying this information will be prepared suitable for posting and distribution to the above-mentioned people and anyone else who may enter the construction area. Upon completion of training, employees will sign a form stating that they attended the training and agree to all the conservation and protection measures.</p> <p>The worker education program shall be repeated as necessary when new construction crews initiate work at the site.</p> <p><b>Measure BIO-1b:</b> Environmentally sensitive habitat outside of the construction zone shall be demarcated with orange plastic fencing in the field under the guidance of a biologist familiar with the habitats after the initial worker training and before site work, including grading, grubbing, vegetation removal, fence installation, etc.</p> <p><b>Less than Significant with Mitigation Incorporated</b></p>

<b>Table S-1 Summary of Project Impacts and Mitigation Measures</b>	
<p><b>Impact BIO-2:</b> Vegetation management in the Wildland Urban Interface could impact special-status San Francisco collinsia and oak-bay woodland, a sensitive natural community.</p> <p><b>Potentially Significant Impact</b></p>	<p><b>Mitigation Measure BIO-2:</b> <i>Defensible Space Management Plan.</i> Prepare a defensible space management plan. The plan shall include protection measures for San Francisco collinsia, and oak-bay woodland. It shall include a requirement to survey and map the current location of San Francisco collinsia within and adjacent to the defensible space management area. The survey shall be conducted during the bloom period, and prior to vegetation management activities. The management plan shall identify protection measures such as temporary fencing during vegetation management activities and training to the workers conducting vegetation management. Remove the fencing once vegetation management is complete so that the ecology of the plant is not disrupted. Plant locations shall be mapped with GPS or other method that allows them to be found again the following year; however, every survey shall include transects (straight or wandering) through the defensible space to find each San Francisco collinsia plant.</p> <p><b>Less than Significant with Mitigation Incorporated</b></p>
<p><b>Impact BIO-3:</b> Although there is a low likelihood of occurrence, project construction could impact special-status amphibian and reptile species.</p> <p><b>Potentially Significant Impact</b></p>	<p><b>Mitigation Measure BIO-3:</b> <i>Pre-construction surveys for Special-status Amphibian and Reptile Species.</i> A qualified biologist shall conduct pre-construction surveys for special-status amphibian and reptile species immediately before initiation of vegetation removal or ground disturbing activities in Phase 1. This survey will be conducted prior to all new ground disturbing work if ground disturbance is phased. When landscaping is being installed during phases 3 and 4 a biologist shall make a morning sweep to inspect for species as noted in measure BIO-9. This survey will be conducted prior to all new ground disturbing work if ground disturbance is phased. Surveys will include walking transects through the project disturbance area and a 100-foot buffer to detect species presence. If species are detected, then a wildlife exclusion fence (such as Ertec) shall be installed to prevent species from entering the site, and it shall be fitted with exit funnels so any species in the project work area can escape. If species are detected the project site shall be monitored regularly in a schedule determined by the biologist in consultation with the US Fish and Wildlife Service and/or California Department of Fish and Wildlife, depending on the species.</p> <p>If special-status amphibian or reptile species are found during the surveys work shall be stopped in that area and the appropriate wildlife agency shall be contacted for direction. The species will be left alone and allowed to move out of the area unless the wildlife agencies specifically allow its removal to a safer location.</p> <p><b>Less than Significant with Mitigation Incorporated</b></p>
<p><b>Impact BIO-4:</b> Stickhouses of San Francisco dusky-footed woodrat</p>	<p><b>Mitigation Measure BIO-4.</b> San Francisco Dusky-footed Woodrat Protection Measures. This measure is divided into part</p>

<b>Table S-1 Summary of Project Impacts and Mitigation Measures</b>	
<p>could be damaged by construction activities.</p> <p><b>Potentially Significant Impact</b></p>	<p>a) pre-construction survey and part b) protection or relocation of woodrat houses.</p> <p><b>Mitigation Measure BIO-4.</b> San Francisco Dusky-footed Woodrat Protection Measures. This measure is divided into part a) pre-construction survey and part b) protection or relocation of woodrat houses.</p> <p><b>Measure BIO-4a.</b> <i>Pre-construction survey for Woodrat Houses within and adjacent to the grading footprint.</i> Within 30 days prior to the start of construction activities, a qualified biologist will map all San Francisco dusky-footed woodrat houses within a 25-foot buffer around the project footprint. The environmentally sensitive habitat fencing required in Measure BIO-1 will be placed to protect the houses with a minimum 25-foot buffer. If a 25-foot buffer is not feasible, a smaller buffer may be allowable based on advice from a qualified biologist with knowledge of woodrat ecology and behavior, or Measure BIO-3b may be implemented.</p> <p><b>Measure BIO-4b.</b> <i>Relocation of woodrat houses.</i> Woodrat houses that require relocation will be assessed for obvious signs of current occupation, other house locations within 200 feet, and possible relocation sites. If the house is clearly unoccupied, plans will be made to dismantle it onto a tarp and move it to another location within 200 feet. If there is any doubt about occupancy, plans will be made to relocate the rats and house to a location within 200 feet of the existing location using live trapping, dismantling, reconstruction, and repopulating techniques outside of the breeding season. This type of relocation is limited to late summer months of July and August.</p> <p><b>Less than Significant with Mitigation Incorporated</b></p>
<p><b>Impact BIO-5:</b> Project construction activities during the nesting bird season (February 1-September 15) could result in the violation of state and federal laws protecting nesting birds if they are present in the trees and shrubs to be removed or in the adjacent area.</p> <p><b>Potentially Significant Impact</b></p>	<p><b>Mitigation Measure BIO-5a:</b> <i>Nesting Bird Survey.</i> To avoid impacts to nesting birds and violation of state and federal laws pertaining to birds, all construction-related activities (including but not limited to mobilization and staging, clearing, grubbing, vegetation removal, fence installation, demolition, and grading) should occur outside the avian nesting season (generally prior to February 1 or after September 15). If construction and construction noise occurs within the avian nesting season, all suitable habitats located within the project's area of disturbance including staging and storage areas plus a 250-foot buffer (passerines), 500-foot buffer (small raptors, such as accipiters), and 1,000-foot buffer (large raptors, such as buteos) around these areas shall be thoroughly surveyed, as feasible, for the presence of active nests by a qualified biologist no more than ten days before commencement of any site disturbance activities and equipment mobilization in Phase 1. If project activities are delayed by more than five days, an additional nesting bird survey shall be performed.</p>

**Table S-1 Summary of Project Impacts and Mitigation Measures**

	<p>Active nesting is present if a bird is sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys shall be documented. If it is determined that birds are actively nesting within the survey area, Mitigation Measure BIO-4b shall apply. Conversely, if the survey area is found to be absent of nesting birds, Mitigation Measure BIO-4b is not required.</p> <p><b>Mitigation Measure BIO-5b: Nesting Bird Protection.</b> If pre-construction nesting bird surveys result in the discovery of active nests, no site disturbance or mobilization of heavy equipment (including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, fence installation, demolition, and grading), shall take place within 250 feet of non-raptor nests, 500-feet of small raptor nests, and 1,000 feet of large raptor nests, or a distance determined by a qualified biologist in consultation with CDFW, until the chicks have fledged. Monitoring shall be required to ensure compliance with the MBTA and relevant California Fish and Game Code requirements. Monitoring dates and findings shall be documented.</p> <p><b>Less than Significant with Mitigation Incorporated</b></p>
<p><b>Impact BIO-6:</b> Tree removal and/or demolition of the existing buildings could result in the removal or disturbance of bat roost habitat and may result in significant impacts to bat populations if an occupied or perennial (but unoccupied) maternity or colony roost is disturbed or removed.</p> <p><b>Potentially Significant Impact</b></p>	<p><b>Mitigation Measure BIO-6a Bat Pre-construction Survey:</b> To avoid impacting breeding, roosting, or hibernating bats protected by California Fish and Game Code, pre-construction surveys of potential bat roost habitat for evidence of maternal or colony bat roosts (e.g., guano accumulation, acoustic, or visual detections) will be performed in all trees and buildings subject to removal or demolition and within a 50-foot buffer within 48 hours prior to project disturbance. Potential sites can be identified and checked in advance but should be re-checked within the 48-hour window.</p> <p><b>Mitigation Measure BIO-6b: Bat Protection.</b> If an occupied maternity or colony roost is detected or evidence of bat occupancy is found, CDFW will be consulted to determine the appropriate mitigation measures, which may include exclusion prior to removal if the roost cannot be avoided, a buffer zone, seasonal restrictions on construction work, and/or construction noise reduction measures.</p> <p><b>Less than Significant with Mitigation Incorporated</b></p>
<p><b>Impact BIO-7:</b> The project would result in a net removal of approximately 0.5 acre of native habitat.</p> <p><b>Potentially Significant Impact</b></p>	<p><b>Mitigation Measure BIO-7:</b> A Habitat Mitigation and Monitoring Plan (HMMP) shall be prepared and implemented to replace the habitats removed at a minimum 1:1 ratio and restore or enhance biological functions and values in the watershed within five years, including primarily at the project site, but also in other areas in the watershed suitable for restoration or enhancement. The HMMP shall incorporate the proposed landscape plan and specify the methods to restore native habitat in areas around the perimeter of the project that are temporarily impacted during construction. It shall include monitoring and</p>

**Table S-1 Summary of Project Impacts and Mitigation Measures**

	<p>performance standards for plantings around the downstream outfall required under mitigation measure BIO-10. It shall include oak woodland restoration onsite wherever feasible. It shall also include off-site restoration within or adjacent to the watershed, including at Edgewood Park and Natural Preserve, and Pulgas Ridge Open Space Preserve nearby. San Mateo County Parks has identified possible actions in Edgewood Park and Natural Preserve (N. Calderon, San Mateo County Parks Department, personal communication). Pulgas Ridge Open Space Preserve adjoins the Cordilleras project site and also has restoration opportunities (K. Lenington, Midpeninsula Regional Open Space District, personal communication).</p> <p>The HMMP will address both on and off-site mitigation. It shall:</p> <ul style="list-style-type: none"> <li>• identify the responsible parties;</li> <li>• describe project impacts to habitat types and functions and values;</li> <li>• set goals and performance standards for replacement of habitat types and functions and values impacted by the project;</li> <li>• set goals and performance standards for the control of invasive weeds with a California Invasive Plant Council Inventory rating of moderate or high;</li> <li>• provide a detailed implementation plan, including a schedule for completing and monitoring the restoration, financial assurances, a planting/restoration plan, an irrigation plan if appropriate, and maintenance requirements;</li> <li>• specify monitoring requirements and a minimum monitoring period of five years, with annual reports; and</li> <li>• identify contingency and adaptive management measures if restoration is not meeting performance standards.</li> </ul> <p>The HMMP is required to be included permit applications to the Regional Water Quality Control Board, California Department of Fish and Wildlife, and US Army Corps of Engineers. Permit requirements related to the HMMP shall be implemented.</p> <p><b>Less than Significant with Mitigation Incorporated</b></p>
<p><b>Impact BIO-8:</b> Construction could inadvertently impact trees close to the grading footprint, but not slated for removal, due to impacts within the tree dripline.</p> <p><b>Potentially Significant Impact</b></p>	<p><b>Mitigation Measure BIO-8: Tree Protection Plan.</b> A tree protection plan shall be prepared by a qualified professional (forester, arborist, landscape architect, or restoration ecologist) to identify protection measures for all preserved trees adjacent to the development footprint which could be impact by construction activity. The tree protection plan shall be included in the project specifications and/or bid documents and shall be implemented prior to the start of construction. It can be phased if construction impacts are phased.</p> <p><b>Less than Significant with Mitigation Incorporated</b></p>

<b>Table S-1 Summary of Project Impacts and Mitigation Measures</b>	
<p><b>Impact BIO-9:</b> Daily construction practices may entrap wildlife.</p> <p><b>Potentially Significant Impact</b></p>	<p><b>Mitigation Measure BIO-9:</b> <i>Housekeeping Measures to Protect Wildlife.</i> The following measures shall be followed:</p> <ul style="list-style-type: none"> <li>• Monofilament plastic netting, including in temporary and permanent erosion control measures (such as straw wattles) shall not be used.</li> <li>• All holes greater than 2 feet deep shall be covered overnight to prevent the entrapment of wildlife. Where holes or trenches cannot be covered, each one shall be inspected daily, shortly before work starts, for trapped wildlife, and the wildlife identified and removed by a qualified biologist. Where feasible, materials shall be designed and positioned in trenches such that entrapped wildlife can escape. This may include ramps, jute netting, or similar methods.</li> <li>• Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals.</li> <li>• Any pipes or similar structures stored in the project site overnight shall be inspected before they are subsequently moved, capped and/or buried. Entrapped animals shall be identified and removed by a biologist. Special-status species shall be relocated by a biologist with the appropriate scientific collecting permit or authorization under the appropriate wildlife agency.</li> </ul> <p><b>Less than Significant with Mitigation Incorporated</b></p>
<p><b>Impact BIO-10:</b> The outfall area downstream of the project does not include restoration planting.</p> <p><b>Potentially Significant Impact</b></p>	<p><b>Mitigation Measure BIO-10:</b> <i>Riparian Restoration Plan.</i> A detailed mitigation planting plan to restore oak woodland or riparian species in this location shall be developed for the outfall. The replanting plan shall be incorporated into the HMMP developed under Mitigation Measure BIO-7.</p> <p><b>Less than Significant with Mitigation Incorporated</b></p>
<b>Geology</b>	
<p><b>Impact GEO-1:</b> Project construction could be impacted by seismic shaking, could destabilize project soils and exacerbate potential for erosion, landslides, and soil liquefaction.</p> <p><b>Potentially Significant Impact</b></p>	<p><b>Mitigation Measure GEO-1:</b> The County shall implement all recommendations identified in the project specific geotechnical report (ENGEO 2019) during the project design and construction phases. Project design shall be consistent with the California Building Code requirements.</p> <p><b>Less than Significant with Mitigation Incorporated</b></p>
<b>Hazards</b>	
<p><b>Impact HAZ-1:</b> Demolition, removal, and transport of building materials containing lead, asbestos containing material, PCBs, mercury, and any project soils containing elevated levels of</p>	<p><b>Mitigation Measure HAZ-1a:</b> The County or its Contractor shall develop and implement a demolition debris management and disposal plan for the non-RCRA hazardous materials that are to be removed from the project site. The plan shall be designed to prevent releases of hazardous materials in quantities that could pose a risk to human health and the environment, as determined</p>

**Table S-1 Summary of Project Impacts and Mitigation Measures**

<p>soluble lead could result in airborne emissions of lead resulting in exposure of workers or the environment to a hazardous material.</p> <p><b>Potentially Significant Impact</b></p>	<p>using appropriate Bay Area Air Quality Management District (BAAQMD), Regional Water Quality Control Board (RWQCB), Department of Toxic Substances Control (DTSC), and/or other appropriate agency screening thresholds.</p> <p>The plan shall identify the receiving qualified landfill and present proof of waste acceptance. The plan shall specify measures to minimize airborne dust during building deconstruction and soil movement to protect construction workers and neighboring residents from exposure to hazardous material emissions.</p> <p>The plan shall address protection of worker exposure to airborne lead paint particulates through use of personal protective gear, clear identification of the location of hazardous materials, and removal by properly trained/certified workers, and proper cover and transport of hazardous materials, etc.</p> <p><b>Mitigation Measure HAZ-1b:</b> Consistent with the Hazardous Materials Investigation prepared for the project (SCA Environmental, 2014), the County or its Contractor shall retain a coring contractor prior to demolition of the structures to perform the following:</p> <ul style="list-style-type: none"> <li>• Core sampling and analysis to determine asbestos content on all roof decks where lightweight concrete is present.</li> <li>• Core sampling and analysis to determine asbestos content of all layers of concrete for the various building systems.</li> <li>• Core sampling under restrooms, under the concrete foundation slab, as well as the subgrade walls to verify the presence of a vapor barrier system. If present, the material shall be tested to verify asbestos content. If the material is found to contain asbestos, the demolition contractor shall possess asbestos-registration and proper training, and such concrete shall not be recycled.</li> <li>• Destructive testing of all other materials assumed to contain asbestos in the Hazardous Materials Investigation (see table in Attachment A of Appendix E).</li> </ul> <p>If any of the above-listed materials are found to contain asbestos, such materials shall be abated in accordance with applicable federal, state, and local regulations regarding worker safety and the safe removal and disposal of asbestos containing materials (ACMs).</p> <p><b>Mitigation Measure HAZ-1c:</b> Consistent with the Hazardous Materials Investigation prepared for the project (SCA Environmental 2014):</p> <ul style="list-style-type: none"> <li>• Destructive sampling of the lead sheeting in the E. Offices Area on the 2nd Floor of the existing CMHC building shall be performed prior to renovation or demolition of the building to determine the presence and lead content of this material.</li> </ul>
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<b>Table S-1 Summary of Project Impacts and Mitigation Measures</b>	
	<ul style="list-style-type: none"> <li>For the purpose of complying with the Cal/OSHA regulation of lead in construction (8 CCR 1532.1), all coated (i.e., painted) surfaces in the existing CMHC building shall be considered to contain some lead and require demolition dust control procedures for compliance with Cal/OSHA's Construction Lead Standard under 8 CCR 1532.1. The aforementioned regulation contains requirements for lead air monitoring, work practices, respiratory protection, etc., that are triggered by the presence of even very low levels of lead.</li> <li>Based on the California Total Threshold Level Concentration (TTLC) hazardous waste standard, the paints may be classified as hazardous wastes. The County or its Contractor shall perform additional sampling and analysis for leachable lead content during demolition to determine waste characterization.</li> </ul> <p><b>Mitigation Measure HAZ-1d:</b> PCBs and mercury-containing materials in the existing CMHC building shall be disposed of in accordance with applicable state regulations and the Municipal Regional Permit in the course of demolition including the management directive of the Chief Building Official with regard to PCBs in structures subject to demolition permits. Disposal methods may include those suggested in the Hazardous Materials Investigation (Appendix E)</p> <p><b>Less than Significant with Mitigation Incorporated</b></p>
<b>Hydrology</b>	
<p><b>Impact HYD-1:</b> The new Cordilleras Creek drainage system conveying creek flows through the project site and detention basins proposed to control stormwater runoff from new impervious surfaces on the project site could contribute to on or off-site flooding if not properly maintained.</p> <p><b>Potentially Significant Impact</b></p>	<p><b>Mitigation Measure HYD-1:</b> Over the life of the project, the County or its Contractor shall maintain the Cordilleras Creek drainage lines to continuously provide flow capacity for a 100-year, 6-hour storm event. All detention facilities shall be maintained to continuously provide the required volume storage in a 10-year, 1-hour storm event, and shall include a financing mechanism to ensure that the required maintenance will be performed. The maintenance plan shall specify how frequently the facilities shall be inspected, and shall include stormwater detention basins, the debris rack(s) upstream of the project site, and the mainline culvert that carries Cordilleras Creek flow beneath the project site.</p> <p><b>Less than Significant with Mitigation Incorporated</b></p>
<b>Noise</b>	
<p><b>Impact NOI-1:</b> Project construction activities would occur in close proximity to the occupied mental health facility (CMHC) and could generate noise and vibration levels that interfere with mental</p>	<p><b>Mitigation Measure NOI-1:</b> To reduce potential construction noise and vibration impacts on mental health service operations, the County shall require the construction contractor to:</p> <ul style="list-style-type: none"> <li>Apply noise attenuation materials to windows of existing CMHC building windows to reduce construction noise in the building interior used for patient care.</li> </ul>

<b>Table S-1 Summary of Project Impacts and Mitigation Measures</b>	
<p>health service operations and/or patient care and well-being.</p> <p><b>Potentially Significant Impact</b></p>	<ul style="list-style-type: none"> <li>• Provide CMHC and Canyon Oaks Youth Center contacts a three-week look ahead schedule to keep the Canyon Oaks Youth Center and CMHC informed of potential construction activities and noise levels.</li> <li>• Regularly (i.e., on a daily or weekly basis) coordinate with staff from the Canyon Oaks Youth Center and CMHC on staff observations regarding patient care, response to construction noise and vibration effects, and overall well-being.</li> <li>• Take actions to reduce construction noise and vibration levels if staff from the Canyon Oaks Youth Center or CMHC observe repeated adverse patient reactions to construction noise and vibration levels that interferes with mental health service operations or operating goals. Such actions may include: <ul style="list-style-type: none"> <li>○ Construction activity management techniques, such as phasing activities to take advantage of shielding/attenuation provided by topographic features or buildings, or coordinating with mental health staff to conduct the most impactful noise generating construction activities at times that may be less intrusive;</li> <li>○ Additional construction equipment controls such as use of electric equipment instead of combustion equipment when feasible;</li> <li>○ Use of temporary sound barriers (equipment enclosures, berms, walls, blankets, or other devices) to reduce noise levels at impacted patient care areas; or</li> <li>○ Monitoring of actual construction levels to verify sound levels and potential noise attenuation benefits of any of the above measures.</li> </ul> </li> </ul> <p><b>Less than Significant with Mitigation Incorporated</b></p>
<b>Traffic</b>	
<p><b>Impact TRA-1:</b> The proposed project would add 18 new employees to an area of the County where VMT per worker (30.96) exceeds the MTC regional daily average VMT for the Bay Area workers (21.80). As a result, the new employees at Cordilleras project would generate VMT at a rate that exceeds the County's significance threshold, which is 15% less than the daily regional average VMT (18.53 miles per worker).</p>	<p>The County implements Transportation Demand Measures (TDMs) such as encouraging use of public transit, ride share, and vanpools. Due to the project's remote location, staffing shift requirements, and limited transit service in the project area, there are no feasible mitigation measures to reduce the project VMT from 30.96 to 18.53 (a 40 percent reduction) to meet the County's VMT standard for new development.</p> <p><b>Significant Unavoidable Impact</b></p>

<b>Table S-1 Summary of Project Impacts and Mitigation Measures</b>	
<b>Significant Unavoidable Impact</b>	
<b>Utilities</b>	
<b>Impact UT-1:</b> Construction of water tank and service line requires hillside cuts and trenching. Potential impacts to vegetation and wildlife could occur. <b>Potentially Significant Impact</b>	See Mitigation Measures GEO-1, BIO-3, BIO-4a and 4b, BIO-5a and 5b, BIO-6, BIO-7a and 7b, and BIO-9. <b>Less than Significant with Mitigation Incorporated</b>
<b>Impact UT-2:</b> Construction of stormwater drainage could impact creek habitat upstream and downstream of the project and impact water quality. <b>Potentially Significant Impact</b>	See Mitigation Measures BIO-6, BIO-8, HYD-1, and HYD-2. <b>Less than Significant with Mitigation Incorporated</b>
<b>Wildfire</b>	
<b>Impact WFR-1:</b> The project would exacerbate existing wildfire risks by reducing soil moisture through tree removal, installing the anti-debris barriers that could accumulate flammable material thereby increasing the fuel load as well as funneling fires into the project area, and constructing buildings adjacent to steep slopes, which could make firefighting more difficult. <b>Significant Unavoidable Impact</b>	<b>Mitigation Measure WFR-1:</b> The County shall prepare a Defensible Space Management Plan to identify specific site treatment activities designed to reduce fuel load. The plan shall identify actions specific to 30-foot and 100-foot defensible space zones pursuant to Cal Fire recommendations. Actions within the defensible space are expected to include, but not be limited to, removal of ground and ladder fuels, regular clearing of debris barriers, and general maintenance of the defensible space zone. The Plan shall specify the frequency of site inspections and vegetation management activities as well as the responsible party for conducting these activities. <b>Significant Unavoidable Impact</b>
<b>Impact WFR-2:</b> The slope surrounding the project could suffer from post fire instability due to loss of vegetation and soil structure. <b>Potentially Significant Impact</b>	<b>Mitigation Measure WFR-2:</b> In the event of a wildfire on the project parcel, a geotechnical engineer will examine the slopes for potential instability. The inspection shall occur as soon as feasible after the fire and before any rain events. A report shall be prepared by the geotechnical engineer, and the County shall implement recommendations to reduce the potential of slope instability. <b>Less than Significant with Mitigation Incorporated</b>

### S.3 CUMULATIVE PROJECT IMPACTS

CEQA requires that an EIR evaluate a project's cumulative impacts. Cumulative impacts are the project's impacts combined with the impacts of other related past, present, and reasonably foreseeable future projects. The approach taken in this EIR to address the cumulative impact analysis is presented in EIR section 14.3. The EIR has determined that the project would increase vehicle miles traveled (VMT) through increased staffing that would contribute to regional traffic

congestion that exceeds County standards. This project impact results in a significant cumulative transportation impact. No other cumulatively significant impacts are identified.

## **S.4 PROJECT ALTERNATIVES**

CEQA Guidelines section 15126.6 states that an EIR shall describe a range of reasonable alternatives to a project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. As described in Chapter 3 through Chapter 10 of this EIR, the project has the potential to result in significant short-term effects during construction and long-term effects after project completion and occupancy. Except for transportation and wildfire impacts, all other impacts would be reduced to a less-than-significant impact level through identified mitigation measures. As described in EIR section 14.1, project contribution to regional vehicle miles traveled and exacerbated wildfire risks remain significant and unavoidable.

### **S.4.1 Alternatives Considered but Rejected**

The County considered various strategies to modernize the CMHC. Alternative project locations were rejected from further consideration upon careful investigation. The entire premise of the project is to optimize the use of the existing Cordilleras site and incorporate its natural setting into the program elements. Considering construction of a new mental health facility outside of the current facility location would be infeasible because the County would have to acquire land at great expense when they already own and operate the CMHC. For this reason, an alternative site was eliminated from consideration as an alternative and is not considered in this EIR.

Eight site plan designs were considered during the design phase including alternate building shapes, clustering, access road configurations, building heights, and outdoor space use. These plans were rejected before due to numerous site constraints steep side slopes, multiple drainages, and riparian and oak woodland habitat values.

### **S.4.2 Project Alternatives Considered in EIR**

The EIR evaluates two project alternatives including; 1) No Project Alternative, and 2) Reduced Project Size Alternative. The EIR discusses each of these alternatives in detail. The Reduced Project Size Alternative is identified as the environmentally superior alternative which can achieve the project objectives.

## **S.5 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED**

CEQA Guidelines require that the EIR Summary identify areas of public controversy and issues that have yet to be resolved including choice among alternatives and whether and how to mitigate the significant effects. The County PDU is working collaboratively with multiple resource agencies on this project. No issues of public controversy have been identified during the Notice of Preparation comment period or in consultation with responsible agencies.

A key issue to be resolved is the appropriate replacement of habitat values lost through removal of 2.3 acres of oak woodland including 160 native trees 4 inches in diameter (DBH) or greater. The proposed restoration plan would plant 176 trees on campus ranging in size from 15-gallon to 36-inch box resulting in restoration of 0.96 acres of woodland. A habitat mitigation and monitoring plan (HMMP) would be prepared as identified in Mitigation Measure BIO-7 to ensure lost habitat is fully replaced a 1:1 ratio. The HMMP would utilize on and offsite locations to replace habitat acreage removed by project development. The County PDU is in active

discussion with San Mateo County Parks Department and Mid-Peninsula Open Space District to identify suitable locations for habitat restoration.

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## CHAPTER 1 INTRODUCTION

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### 1.1 INTENDED USES OF THE EIR

The California Environmental Quality Act (CEQA; PRC §21000 et seq.) and the CEQA Guidelines (14 CCR §15000 et seq.) establish San Mateo County as the Lead Agency for the project. The Lead Agency is defined in CEQA Guidelines section 15367 as “the public agency which has the principal responsibility for carrying out or approving a project.” The Lead Agency decides whether an EIR or Initial Study/Negative Declaration is required for the project and is responsible for preparing the appropriate environmental review documentation. In this case, the County of San Mateo has determined an EIR is the appropriate CEQA document for the project. This Draft EIR has been prepared by the County in accordance with CEQA Statutes and the CEQA Guidelines.

This EIR will be used by the County, other regulatory agencies having jurisdiction over the project (Responsible and Trustee Agencies), when considering approval of the proposed project. An EIR is an objective, informational document that informs decision makers and the public of the potential for significant project effects, including possible ways to minimize those effects, and describe reasonable alternatives to the project (CEQA Guidelines §15121(a)). An EIR must be prepared with a sufficient degree of analysis to provide decision makers with information enabling them to make a decision that intelligently considers the project’s potential direct and indirect environmental consequences. The evaluation of the environmental effects of the proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible (CEQA Guidelines §15151). The information contained in this EIR will be used for all project-related discretionary approvals subject to environmental review. A complete list of anticipated subsequent approvals is provided in EIR section 2.7.2.

### 1.2 LEAD AGENCY CONTACT INFORMATION

The contact person for San Mateo County is:

Mr. Sam Lin, Assistant Director  
San Mateo County Manager’s Office, Project Development Unit  
1402 Maple Street  
Redwood City, CA 94063  
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### 1.3 SCOPING OF ENVIRONMENTAL ISSUES/NOTICE OF PREPARATION

A Notice of Preparation (NOP) for the EIR was published on July 1, 2015 (**Error! Reference source not found.**) to invite comment on the scope and content of the environmental review; the comment period closed on July 31, 2015. Two comment letters were received in response to the NOP, one from Caltrans and one from the City of Redwood City. Both are attached in Appendix A. Additionally, the County of San Mateo held a public scoping meeting on September 17, 2015 for the purpose of inviting public comment. Public notice of the scoping meeting was distributed to adjacent property residents, homeowner and neighborhood associations, local community agencies, and interest groups. Notice was also published in a newspaper of local circulation.

The following is a summary of comment received.

- Traffic – need for a traffic impact study to address increase in number of employees. See traffic discussion in EIR Chapter 10.
- Parking – adequate site parking. See parking discussion in EIR Chapter 10.
- Neighborhoods – outreach to adjacent residential neighborhoods. Outreach addressed through project scoping process described above.
- Cordilleras Creek – potential impacts to creek from site development and project alternatives to address creek impacts. See biology discussion in EIR Chapter 4.
- Building Heights – height of new building and possible visual effects. See aesthetics discussion in EIR Chapter 14 (section 14.4.1)



## CHAPTER 2 PROJECT DESCRIPTION

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### 2.1 LOCATION AND SITE DESCRIPTION

The Cordilleras Mental Health Center (CMHC) is located at 200 Edmonds Road in unincorporated San Mateo County, California (Figure 2-1 Regional Location; and Figure 2-2 Site Vicinity). The site is located approximately 0.5 miles northeast of Interstate 280. Access to the site is from Edgewood Road and Crestview Drive, near the borders of the City of San Carlos and Redwood City. The 20.6-acre property (APN 050-470-050) is owned by the County of San Mateo and is zoned as Resource Management. The proposed Cordilleras Health System Replacement Project would occur within a 7.41-acre disturbance limit within the property.

The existing CMHC facility comprises a Y-shaped three-story concrete building with a 117-bed capacity, a recreation yard, and a parking lot with three driveways (two for entrance and one for exit). The property is shared by County Fire Station No. 18 and Canyon Oaks Youth Center, a residential treatment program for adolescents. The existing CMHC facility and surrounding land uses are shown in Figure 2-3 Aerial Photograph.

The site is situated southwest of Pulgas Ridge Open Space Preserve and is surrounded on all sides by a mosaic of undeveloped oak/bay woodland, coastal scrub, and grassland habitats located in the City of San Carlos, Redwood City, and unincorporated San Mateo County.

The portion of the site paralleling Edgewood Road is narrow, steeply-sloped, and inaccessible by roads. The center of the site is a canyon running east to west, with steeply sloped sides to both the north and south with an average slope of about 1.5:1 (The topography of the surrounding area can be seen in Figure 2-2). Site elevations extend from about 280 feet above sea level at the canyon floor to 420 feet at the hilltops. The seasonally active Cordilleras Creek runs along the bottom of the canyon. Cordilleras Creek and the adjacent riparian zone contain waters of the state and the United States but do not contain wetlands. The site is known to contain two special-status species: the San Francisco dusky-footed woodrat and San Francisco collinsia.

Cordilleras Creek flows west to east for approximately 500 feet and then enters an underground concrete pipe where it splits into north and south tributaries. The creek daylight just past the Canyon Oaks Youth Center to the south and just beyond the site property line to the north. A second culvert system, less active than the main creek, carries water from a north tributary underground along the northern edge of the site. Much of the site is heavily wooded, with a few gravel access roads and trails traversing the site and providing access to a water tank on the northern hilltop.

### 2.2 PAST AND CURRENT USE OF THE CMHC

The CMHC building was constructed in 1952 as a tuberculosis hospital. With the reduction of tuberculosis cases in the following decades, the hospital closed and sat unused for several years before being repurposed in 1978 for its current use as a psychiatric treatment center.

The CMHC houses two separate treatment programs for adults with chronic mental illness: a licensed locked 68-bed Mental Health Rehabilitation Center (MHRC) and a licensed unlocked 49-bed adult residential facility (Co-Housing). CMHC serves San Mateo County adult residents with long histories of mental illness and multiple episodes of acute psychiatric hospitalization.

Most residents are admitted to the locked MHRC beds from San Mateo Medical Center's psychiatric inpatient unit or another locked facility outside San Mateo County. The MHRC is the highest, most intensive level of care for people with mental illness other than psychiatric inpatient services and state hospitals. All of the residents of the MHRC are conserved, dependent adults, who meet legal criteria for grave disability, and the vast majority has been admitted to the program involuntarily. Without access to the Cordilleras MHRC, most would remain in psychiatric inpatient services, state hospitals, or out-of- county MHRCs. Patients are admitted to the MHRC with the goal of achieving sufficient recovery from the symptoms of their mental illness, so they can regain independence and return to living independently in the community. The relative proximity of the CMHC to patients' families and friends in San Mateo County increases the possibility of re-establishing relationships and support that help them ultimately graduate to living independently. The length of time residents remain in the program varies considerably; some remain in the program for more than one year and others leave within six months. CMHC provides mental health and substance abuse treatment on-site as well as routine primary care. More urgent acute medical and psychiatric needs are addressed through return to the San Mateo Medical Center.

The unlocked Co-Housing is permanent housing in which residents may stay for many years, although most do not. The majority of Co-Housing residents have "stepped down" from more intensive levels of care including the MHRC and other facilities outside of San Mateo County. The average length of stay for those discharged is five months. Residents are free to come and go, and frequently use the bus that stops in front of the building. Most of the residents at the Co-Housing receive their mental health treatment at an outpatient behavioral health clinic located in Redwood City.

## **2.3 PROJECT OBJECTIVES**

### **2.3.1 Project Need**

The current CMHC building is a repurposed old tuberculosis hospital that was not designed for the purpose of providing mental health care. At 67 years old, the current CMHC building is nearing the end of its useful life. A feasibility study to replace the CMHC building was prepared by HGA Architects and Engineers (2014). The building is deteriorating, maintained at considerable annual expense, and has deferred maintenance and upgrade needs. The existing facility does not meet current safety standards and is not consistent with current codes and regulations. The large institutional structure does not support current treatment practices and support services that are effective in promoting recovery for people who have serious mental illnesses. Additionally, the current design does not meet the requirements for federal reimbursement.

#### **2.3.1.1 Existing Facility Does Not Meet Current Safety and Regulatory Requirements**

The existing CMHC facility has numerous outdated building systems and utilities that need upgrading and replacement, including a number of issues that pose safety hazards and/or do not meet current codes and regulations. Possible safety hazards and/or regulatory violations from existing structures or building systems are listed below.

- **Building Structure:** Remedial work and a thorough analysis would be required to address the seismic performance of the existing structure. The discontinuous concrete

exterior wall below the second level has insufficient load-bearing capacity in violation of current building code requirements.

- **Water System:** Recent fire hydrant flows tests show that the system does not meet current California Fire Code requirements for pressure.
- **Heating Plant System:** The two, natural gas-fired steam generating boilers located in the basement level of this main building do not meet the current regional air quality requirements.
- **Fans and Supply/Exhaust Air Distribution Systems:** The patient rooms ventilation, the heating air handling system, and the kitchen exhaust fan and duct system serving the hood do not meet current code requirements.
- **Plumbing Fixtures:** Most of the plumbing fixtures in the building have exceeded their service life and do not meet current low flow standards and ADA requirements.
- **Fire Protection Systems:** The building is partially fire-sprinklered with only the Basement Level currently sprinklered at this time. The current code requires this type of building occupancy to be fully sprinklered.
- **Electrical Distribution Systems:** The installation of the utility transformer in an indoor dry vault in the basement does not have the accessibility required by the Utility Company and is no longer compliant with the Utility Company standards and regulations.
- **Emergency Distribution System:** The installed location of the emergency generator equipment is not in compliance with the current code requirements for essential/emergency systems. The basement level location is at risk for flooding during a heavy rainfall.
- **Lighting System:** The majority of the luminaires are outdated and not energy efficient. Both lighting and associated controls are outdated and no longer comply with the latest requirements of Title 24.

The list above focuses on the structures and systems that pose safety hazards and/or do not meet current codes and regulations and does not include all outdated systems in need of repair or replacement. A list including all repairs and replacements needed can be found in the Feasibility Study (HGA 2014).

### 2.3.1.2 Existing Facility Does Not Meet Current Best Treatment Practices

The “Y-Shaped” plan of the existing building was designed for an acute care hospital function (for treatment of people who had tuberculosis) that allows a large capacity of people within an efficient floor plate. The overall functionality of the current building is not ideal as it was not designed for the current MHRC and Co-Housing functions. The two levels of care require different levels of security and it is detrimental for them to co-exist in the same building and share one designed entry point. The Co-Housing’s level of non-secure residential housing is different than the high secure treatment facility of the MHRC and both need a different planning and design response. The existing CMHC building does not meet the optimal residential and treatment needs and best practices of both the MHRC and the Co-Housing programs.

There is a strong case for treating people with mental illness in smaller scale, more homelike settings rather than large institutions like the existing CMHC building. Most large institutions were designed decades ago for maximum supervision and control of a large number of patients

by a minimum number of staff. They were not designed for the purposes of promoting recovery and rehabilitation of patients. Over the last twenty years revolutionary improvements in treatment and medications now make it possible for people, who in a previous era would have been confined to a state hospital for life, to return to the community and live successfully. For this transition to occur successfully, however, patients must have the opportunity to develop and practice the skills they will need before they leave the hospital. State of the art environments for psychiatric recovery and rehabilitation are now designed to more closely resemble the homes in which patients will live upon leaving the treatment facilities and returning to the community.

Smaller residences reduce social isolation and create a more natural environment for social skills training to reduce problems with adjustment as patients move through successive levels of care and finally achieve independent or supported living in the community. Smaller residences can be designed to have less noise, stimulation, and mixing of patients than do larger facilities, thus reducing stress and aggression that can lead to violent behaviors. Treatment may be more tailored to address the different needs of individual patients in smaller residences versus larger facilities containing congregate groups. The optimal facility scale and design would address both requirements for security, monitoring and safety and requirements for residents to practice skills of everyday life and become more autonomous. Research suggests that there is a correlation between larger program size and longer lengths of stay. As the number of beds in a program grows, the less efficient the program becomes.

### **2.3.1.3 Current Design is Not Eligible for Federal Reimbursement**

San Mateo County Health System, Behavioral Health and Recovery Services (BHRS) currently spends \$8.7M per year for services provided at CMHC for 117 patients. None of their treatment services are currently federally reimbursable because of federal law that excludes psychiatric facilities over 16 beds from Medicaid reimbursement. Treatment facilities that are smaller than the CMHC, housing 16 or fewer individuals, and that meet various other requirements, are eligible for federal reimbursement of 50% of treatment costs under existing laws and regulations. Due to increased staffing and more intensive programming the total annual expense of operating smaller treatment centers would be greater than the current operating expenses. However, reimbursement and revenue would offset the added cost, leaving the Health System with the same net cost for expanded, more modern and more effective facilities.

### **2.3.2 Project Goals**

San Mateo County has the following goals in pursuing the proposed Cordilleras Health System Replacement Project.

- **Focus on Wellness – to be healthy:** Provide wellness in an environment that will support and reflect a productive individualized wellness path for all patients.
- **Promote Respect - to be livable:** Provide a strong foundation of assuring dignity and respect for its patients and staff. Emphasize consumer's choice, in a safe environment that inspires pride, motivates the spirit, accommodates diversity in culture and beliefs, instills optimism for personal growth and improves quality of life.
- **Build Community – to be collaborative:** Build strong communities – amongst their own patients, families, staff, and visitors, and add value to the surrounding community. Become an integral part of its social surroundings, with its programs and services valued as innovative assets and its residents respected as citizens.

- **Heal through Nature – to be environmentally conscious:** Capitalize on the beautiful serene natural setting to complement the process of wellness, rehabilitation and recovery. Incorporate progressive sustainable design strategies, efficient building systems, and natural materials to the benefit of healthy people, place, and planet.
- **Strive for Recovery - to flourish:** Help patients realize their full potential, achieving their goals for recovery, and return to living independently in the community. Develop a world-class model of care that sets a new standard for excellence, by drawing from current best practices and anticipating future advances in behavioral health care.

### 2.3.3 Project Objectives

San Mateo County has the following objectives in proposing the Cordilleras Health System Replacement Project.

- Replace aging facilities with buildings that meet all current building codes and regulations.
- Reduce the cost burden, estimated at 55 million dollars, for infrastructure repairs and renovation needed for long-term use of facility.
- Provide safe living environments for staff and patients; reduce resident to resident and resident to staff altercation.
- Design treatment program using current best practices
- Design treatment facilities to avoid the federal Institute for Mental Disease reimbursement exclusion by meeting the following criteria:
  - The licensed capacity of each treatment program (MHRC buildings) will not exceed 16 beds.
  - The facilities will each be separately licensed and will each be able to meet conditions of participation.
  - Each treatment program will be physically free-standing, organizationally distinct, contracted by the County to be operated by different vendors with different chief executives and different chief medical officers.
  - The programs will be operated out of different addresses on the 20-acre site.
- Reduce length of stay and readmission rates to the MHRCs
- Reduce admissions to Psychiatric Emergency Services for the Cordilleras population
- Increase satisfaction of both patient/family and staff
- Reduce waiting time for the transfer from the San Mateo Medical Center psychiatric inpatient services to the MHRCs to improve access and patient flow through the healthcare delivery system.

## 2.4 PROJECT CHARACTERISTICS

### 2.4.1 Overview of Operational Changes

The Cordilleras Health System Replacement Project would replace the existing building with multiple smaller buildings. An overview of the proposed changes is presented in Table 2-1. The project would increase the number of Co-Housing beds and decrease the number of MHRC beds. Overall the capacity of the CMHC would be increased from 117 to 121 beds. Staffing levels

would be increased from 89 to 107 full-time equivalents to accommodate the increase in facility capacity and to provide higher staff to patient care ratios consistent with current best practices for mental health care.

<b>Table 2-1 Summary of CMHC Facility and Operational Changes</b>		
<b>Feature</b>	<b>Existing Facility</b>	<b>Proposed Change</b>
Facility Buildings	One 3-story building (77,000 sf) hospital structure	Four 1-story residential (MHRC) buildings (9,700 sf each) One 3-story Co-Housing building with community center on ground floor and Co-Housing residences on upper two floors (35,000 sf) Project total: 73,800 sf
Licensed Bed Capacity	MHRC 68 beds, locked Co-Housing 49 beds, unlocked	MHRC 64 beds, locked Co-Housing 57 beds, unlocked
Staffing	89 full-time equivalents	107 full-time equivalents
Outdoor Space	Concrete recreation yard on third story, undeveloped grounds	Landscaping, vegetable garden, outdoor meeting space, future ball court
Parking for CMHC	65	110
Project Site Coverage	Impervious surface (roof and pavement): 2.7 acres Pervious surface (landscape): 4.7 acres Total area: 7.4 acres	Impervious surface (roof and pavement): 3.8 acres Pervious surface (landscape): 3.6 acres Total area 7.4 acres
Fire Protection`	150,000-gallon storage tank; 32 ft, 8-inches diameter, 24 ft height; 1,000 gallon per minute delivery; 6-inch fire line; 4-inch domestic line; 20 psi	Additional 318,000-gallon storage tank; 48 ft diameter, 24 ft height; 2,750 gallon per minute delivery for up to 2 hours; 8-inch fire line; 4-inch domestic line; 20 psi
Annual Operating Costs	9.8 Million Dollars	17.3 Million Dollars
Federal Funding	0% (facility does not meet size requirement for federal reimbursement)	50% reimbursement of treatment costs

### 2.4.2 Site Plan Development

The MHRC and the Co-Housing are proposed to exist in separate structures on the site in order to maximize reimbursement potential, optimize treatment opportunities and create a more comfortable and safe residential living environment.

### **2.4.2.1 New Buildings**

#### ***MHRC Buildings***

The MHRC facility would include four single-story buildings orientated along a loop road accessing the project site (Figure 2-4 Site Plan). Each MHRC building would be constructed in a two-wing design with each wing housing six patients in private bedrooms and two patients in a semi-private bedroom. Each bedroom would include a bathroom with a toilet and shower, and each wing would include a shared living room for the four occupants of that wing. The central area of the MHRC buildings would include a care team zone, kitchen/dining room, library/multi-purpose/meditation room, and four support services rooms. Each building would be approximately 9,700 gross square-feet (GSF) in size. Courtyards secured with fences would be located between each of the MHRC buildings and would be accessible from the dining areas in the buildings. Building floor plans are present with project drawings in Appendix B, Sheets A0101, A0111, A0112, and A0113.

#### ***Co-Housing Building***

The Co-Housing building would include one 39,190 GSF building with the Community Center components on the ground level and the Co-Housing 57 bedrooms split among two floors above. Each of the two Co-Housing floors would be 13,430 GSF over an approximate 12,330 GSF Community Center.

The Community Center would be the hub of the proposed new CMHC facility and would include staff offices, an industrial kitchen, a large auditorium/gymnasium, and conference space and activity rooms. Staff offices at the Community Center would complement office space designated in MHRC buildings and the Co-Housing and would also provide for basic medical services. The industrial kitchen would produce meals for patients living in the residential floors above the Community Center and would be a place where meals can be prepared for events taking place on the CMHC campus. The kitchen would also serve as a life skills training area and for gourmet cooking classes for patients and would utilize crops harvested from the organic gardening program. The auditorium/ gymnasium would be available for group fitness classes, group rehab therapies, indoor sports, movies, theatre productions, special CMHC events, community events and other social gatherings. Other programs and services at the Community Center would include a yoga/dance studio, a secondhand store, an art studio and gift shop.

The bedrooms, dining, group activity, and living rooms in the Co-Housing building would be more central than in the MHRC buildings because these patients have a reduced level of care need and the focus for these patients is supportive residential living rather than treatment. The Co-Housing treatment program would be located in the same building as the Community Center to conveniently share and utilize the campus amenities proposed in that program. The Co-Housing floors would be designed as a linear scheme with bedrooms on the ends separated by a central activity/ dining core with entry points. Each Co-Housing floor would typically include seven semi-private bedrooms and four private bedrooms, each with its own bathroom. The central area of each Co-Housing floor would include a kitchen/dining room, a living room/library, a living room/meditation room, a care team zone, and support offices.

#### ***Sustainable Design***

The project proposes the Zero Net Energy (ZNE) performance standard as a basis-of-design in order to achieve a rating in the Leadership in Energy & Environmental Design program (LEED).

Some of the proposed sustainable design strategies include:

- Rain water catchment and treatment to conserve water and reduce impacts to the County stormwater system.
- Rooftop photovoltaic arrays and fuel cell systems for on-site energy production.
- High-efficiency heating and cooling systems, such as Variable Refrigerant Flow.
- The use of extensive day-lighting and natural ventilation to take advantage of the site's built-in conditioning systems.

#### **2.4.2.2 Central Open Area**

The proposed project features an open area in the center of the site located between the Co-Housing and the MHRC buildings. The space would provide a recreation yard with walking paths and sitting area. The central area would provide public space available for use by all staff and all residents and their guests. A future basketball court is planned to be installed in the open area. The majority of the open area is also be designed to function as a biofiltration basin to collect and treat stormwater flows prior to discharge into the storm drain system.

#### **2.4.2.3 Site Access, Circulation, and Parking**

Site access would continue to be provided via Edmonds Road. A new 26-foot wide service and fire access loop road extending from Edmonds Road would provide access to the four new MHRC buildings (Life Safety - Site Plan; Appendix B, Sheet G0051). Front door entry and parking would be provided for each MHRC building as well as the Co-Housing building, as shown in the site plan (Figure 2-4). Maximum vertical grades for the loop road are set at 5% to allow for adjoining sidewalks to meet accessibility requirements.

The main front door to the Co-Housing building would be located off of the access road and would be configured with a passenger drop-off area. A loading dock would also be located on the south side of the building. A bus stop with a shelter would also be located at the front of the Co-Housing building main entry. There would be ADA accessible drop off areas in front of each building.

Walkways fronting the loop road would allow for ADA accessibility between the MHRCs and through the central open space and a minimum of 4-foot wide. The open space area sidewalks would allow for access between the MHRCs and the Co-Housing building which would be further developed in the design development phase.

All new access roads, with the exception of the new connection to the existing water tank road, would have minimum 4-foot wide concrete sidewalks to allow for accessibility access with maximum grades of 5% and minimum 2% cross slopes.

A water tank access road ramp would be built in between the two northern MHRC buildings which would provide maintenance access to the water storage tank site. It would match to grades of the existing access road above. The ramp would be constructed per CalFire requirements. The existing access road would have a new 6-inch crushed rock surface allowing for weatherized access to the water tank site. To allow for fire truck access the graveled section of the road would be 12-foot wide and one turnout would be allowed halfway up between the MHRCs and the water tank site.

In total, the new CMHC facility would include parking for 110 cars (70 regular, 34 compact and 6 ADA accessible) to accommodate staff and guests. Parking includes 11 spaces for clean air vehicles and 7 EV charging stations to promote the use of clean air vehicles. Twenty-two spaces would be located along Edmonds Road. The remaining spaces would be located in two parking



bays and two parking strips distributed along the loop road as shown in the Life Safety – Site (Appendix B, Sheet G0051). The existing CMHC facility has 65 parking spaces.

#### **2.4.2.4 Landscaping Plan**

The Cordilleras Health System Replacement Project landscape plan is designed to address new pedestrian circulation, replacement for removed trees and habitat values, stormwater capture strategies, and landscape as a healing tool for residents of the new campus. The campus proximity to Pulgas Ridge Open Space Preserve allows for physical and visual connection to surrounding tranquil landscapes. The site landscape plan is designed to reinforce the site's natural amenities while providing safe paths and gathering areas for residents, visitors and staff. Outdoor spaces include a small entry plaza, a central open space with walking paths, and self-contained courtyard gardens to serve clients within the MHRC buildings (Figure 2-5 Landscape Plan).

The central open space connecting the main building with the surrounding MHRC buildings would consist of two general zones: a small paved plaza space with flat, seeded turf lawn close to Building A and a more naturalized hydroseeded meadow landscape further west into the campus. The entry paved area and open lawn allows for flexible space for special events and activities while serving as a transition space between the active entry and tranquil meadow/creek area. The flat turf area allows flexibility for future site programming development. The lawn transitions into sloped, hydroseeded planting areas. Pedestrian connections are designed to maximize accessible routes throughout campus. Sinuous asphalt walkways connect the campus buildings while providing safe paths throughout the site. Planted areas would be graded at a 3:1 maximum slope to minimize erosion.

Private courtyards and patios for each MHRC building provide a calm, familiar, and safe environment for the most intensive care clients. Each private courtyard would have seating areas, walking loops, and gardening opportunities to create a strong connection between the indoor and outdoor space. The furniture in the courtyards would be furnished by owner, but where financially feasible bolted to the ground to ensure stability for the residents. These courtyards would utilize low water-use plantings. Plantings for the MHRC courtyards are identified in the Landscape Plan (Figure 2-5). There would be 12 feet tall fenced enclosures that edge each courtyard, allowing for viewshed to the surrounding hills while allowing for privacy inside the courtyards from neighboring buildings and visitors. Courtyards may also include maintenance gates.

Due to the overall campus improvements, 160 native trees and 79 non-native trees would need to be removed. The Landscape Plan includes 176 trees of predominately native species (see EIR Chapter 4, Biological Resources). Tree species and size have been selected to reinforce the character of the existing surrounding campus. Landscape materials would help reinforce the campus identity and would be selected for their ease of maintenance, including low water use meadows and plants adapted to local conditions. Screening planting would be provided along fenced improvements and utility equipment interfaces.

Landscape improvements would also include stormwater management best practices as set by regional and state water quality guidelines. On-site biofiltration basins with appropriate planting material and infiltrative soils would be installed to help manage on-site stormwater runoff. Tentative locations and treatment strategies have been coordinated with the project civil engineer and are located generally around the project site's lower points of drainage. In addition, the

design team continues to work with environmental consultants to determine the level of environmental mitigation required on site.

The irrigation system for the project would be designed to utilize highly efficient, low water use equipment. All site planting would include appropriate irrigation and drainage structures. Planting areas would be irrigated with inline drip irrigation and pop-up spray heads; areas of turf with pop-up spray heads and rotors. Irrigation control and scheduling would be based on plant type, soil conditions, microclimate, and time of year. Irrigation equipment would be selected and designed to be easily maintained over time.

### 2.4.3 Utility Improvements

#### 2.4.3.1 Water System

The Cordilleras property is served by an existing 150,000-gallon water tank (127,950 gallons of available water storage based on 4-feet of freeboard within the tank), which feeds both a potable water distribution system and a fire water service system. The increase in water demand for the project is approximately 3,600 gallons per day (gpd) as shown in Table 2-2.

<b>Table 2-2 Project Water Demand</b>						
<b>Water Use</b>	<b>Pre-Project Demand</b>			<b>Post-Project</b>		
	Units	Demand per Unit (gpd)	Total Water Demand (gpd)	Units	Demand per Unit (gpd)	Total Water Demand (gpd)
CMHC Patients	117	75	8,775	121	75	9,075
CMHC Staff	89	50	4,450	107	50	5,350
Landscape Irrigation	33,720 sf		2,419	67,439 sf		4,837
<b>Total Demand</b>			<b>15,644</b>			<b>19,262</b>

A new tank 318,000-gallon storage tank (270,900 gallons of storage based on 4 feet of tank freeboard) is proposed to provide additional water service for the site to meet new demand and fire flow requirements. The new tank would be a 24-foot tall 48-foot diameter bolted steel tank located adjacent to the existing tank (Water Storage Tank Plan; Appendix B, Sheet C0801). The existing water storage tank would remain in operation during both construction and post development and would assist in meeting the project water storage requirements. The requirements for the new facility were calculated to meet Appendix B of the 2016 California Fire Code. The Co-Housing building creates the most demand for both hydrant and sprinkler flow based on square footage and is used to establish the minimum storage volume. The new tank size in combination with the existing tank would meet the storage requirements.

The first phase of construction would include a new 4-inch fill line between the existing pump station and existing tank and a 12-inch supply line between the tank and the Co-Housing building. These lines would be constructed along the perimeter of the development area above the proposed soil nail walls to keep them outside the limits of construction. These lines would keep the existing tank operational during construction. A central pump station located in the Co-Housing building would provide both potable water and fire service to all the buildings.

A new 12-inch water supply line from the existing tank would feed the new 12-inch water line loop located in the new site loop road, which would supply the hydrants and the main

potable/fire water pump station room located in the Co-Housing building. (Utility Plan; Appendix B, Sheets C0401 to C0406). New domestic/fire sprinkler supply lines from the water pump station room would provide fire and potable water service to each of the MHRC buildings.

A new irrigation service would be required for the facility and would connect to the fire sprinkler/domestic line in the loop road. The exact location of the service point of connection and irrigation controller would be determined during the design development phase.

#### **2.4.3.2 Sanitary Sewer System**

A new sanitary sewer collection system would be installed to replace the existing system servicing the CMHC, Oak Canyon Youth Center, and County Fire Station while also meeting 72-hour emergency storage requirements. The new system would collect wastewater from each new and existing building and convey discharges to the point of connection at the existing sanitary sewer line in Edmonds Road at the east entrance to the site. The collection system would include underground storage tanks that would detain up to 72-hours of sewer discharge in an emergency situation. This would require underground storage tanks at the outside of each building or one large storage tank for the entire site near the east entrance (Utility Plan; Appendix B, Sheets C0401 to C0406). The sanitary sewer collection system consists of 8-inch sanitary sewer mains, manholes, service connections to new buildings, and cleanouts at building services.

The existing CMHC building would need to remain operational during construction. In order to allow for this, a temporary sewer service would be constructed. This temporary service would be located to allow construction activities to be carried out unhindered.

The existing CMHC sewer point of connection is located on the east wing entrance at the bottom of the existing vehicle ramp/parking area. A temporary 6-inch sanitary sewer line would connect to the existing point of connection to a new temporary manhole located in Edmonds Road). This temporary service would be located in the CMHC building breezeway allowing for operation during construction.

The temporary service line would be deep enough to allow for clearance under future grade beams crossing the breezeway and through proposed temporary shoring. The grade beams tie together the foundations of the two sections of the CMHC building and are not expected to be deeper than five feet below finished grade.

#### **2.4.3.3 Storm Drain System**

Cordilleras Creek and its tributaries run through the existing Cordilleras campus. The series of existing headwalls, inlet structures, outfall structure, and up to 48-inch diameter underground storm drainpipes intercept the upstream discharges and convey discharge into existing outfall into Cordilleras Creek channel near the Edmonds Road entrance (Appendix B, Figure 3.1 Existing Cordilleras Creek Storm Drain Collection System). The existing storm drain system is undersized for heavy rainfall events. The main headwall at the upstream end of the site has been known to overflow and flood portions of the site. Additionally, the outfall structure is breaking apart and deteriorating due to undermining at the discharge point.

A new storm drainage collection, detention, and treatment system would replace the existing system conveying Cordilleras Creek, two tributaries, and existing site development runoff (Appendix B, Figure 3.4.1 Cordilleras Creek Storm Drainage System Layout). The new system would intercept existing discharges from Cordilleras Creek, the tributaries, and the new site development. The new storm drain system would consist of a network of 8- to 42-inch diameter pipes, catch basins, manholes, and trash racks to collect surface runoff and convey it to one of

the existing, large diameter pipes (Utility Plan; Appendix B, Sheets C0401 to C0406). The existing 30-inch and 42-inch diameter pipes would be relocated around the new building footprints creating a system with fewer bends. The straightened alignment would allow the transport of more debris through the system. Routine maintenance would be required to ensure the storm drain system performs as intended.

As part of the project, a new upstream headwall (Headwall; Appendix B, Sheet C0703) and downstream outfall (Outfall; Appendix B, Sheets C0701 and C0702) on Cordilleras Creek would be constructed to replace the existing failing structures. The drainage system improvements would incorporate bio-engineering stream protection measures to address creek flow impacts. The drainage improvements are subject to design review and permitting by resource agencies (i.e., USACE, RWQCB, and CDFW) for impacts to jurisdictional waters as described in Biology section 4.3.4. The existing headwalls and spillway at the Canyon Oaks Youth Center (south tributary) would not be modified. The eastern tributary would be intercepted at the northern end of the fire access road and equipped with a trash rack and overflow riser. The trash rack at the main tributary of Cordilleras Creek would be modified and equipped with an overflow riser pipe.

Runoff from the new building roofs and access roads would be directed to biofiltration basins with bubble up structure to treat stormwater prior to discharge into the main 60-inch storm drain line that would discharge into Cordilleras Creek at the downstream end of the site. Multiple biofiltration basins would be located throughout the site at low points and other natural areas to collect and treat runoff (Storm Water Control Plan; Appendix B, Sheet C1401). The biofiltration basins would be sized to accommodate any required stormwater detention. The basins would consist of an 18-inch layer of highly permeable soil over 12 inches of drainrock with a perforated subdrain pipe. Each treatment area would have an overflow drain connecting to the site storm drain system to handle large storm events.

There would be a slight increase in overall peak discharge at the new outfall when comparing pre- versus post-buildout conditions. Any necessary stormwater detention would be addressed by increasing the volume of the biofiltration basins to act as detention. Volume calculations would be finalized during the design development phase.

The on-site detention and Cordilleras Creek realignment backbone storm drainpipes would be designed to provide flood protection based on a 100-year reoccurrence in a 6-hour rainfall event. The Cordilleras Creek backbone storm drainpipes would be 60-inch diameter in order to provide the adequate flood protection to the new campus. The on-site storm drainage collection system would be sized to meet the 10-year reoccurrence in a 1-hour rainfall event discharging into realigned Cordilleras Creek backbone system.

#### **2.4.3.4 Electrical and Communications Systems**

There is currently an existing 12kV overhead electrical distribution line and telephone line running along the southern edge of the site which provides service to the campus. The point of connection for the existing facility is from an existing overhead pole across from the existing CMHC building. The main electrical service for the entire CMHC facility would be fed via a new Pacific Gas and Electric (PG&E) pad mounted transformer located at the site in the vicinity of the Co-Housing building. This would use the existing overhead line, and no offsite upgrades would be required for the power grid system. A riser would run down the pole for the electrical and communication services that would then be undergrounded into a joint trench that would run to the new PG&E electrical transformer located near the Edmonds Road entrance to the site and directly to the electrical room of the north wing Co-Housing building. The transformer for the

primary service would be located at the north corner of the Edmonds Road entrance to the site. The secondary electrical feed would run from the transformer to the Co-Housing north wing electrical room in a joint trench (Utility Plan; Appendix B, Sheet C1013).

One main PG&E kilowatt-hour (kWh) meter would be installed for the facility. The main switchboard would be installed in the Co-Housing building main electrical room. Electrical and communications service for all buildings would be fed from this room. Step-down transformers would be installed in the Co-Housing electrical room to provide 120/208 volt, 3-phase power for the branch circuit panel boards.

Each of the MHRC buildings would have a minimum of two underground vaults for the new electrical and communication services. The electrical vault sizes would house the distribution panels and would be approximately 3 feet by 5 feet in size. The communication vaults are anticipated to be approximately the same size.

An emergency standby diesel engine generator unit would be installed near the Co-Housing building to provide 12 hours back-up power for 80 percent of the electrical load of the entire facility.

The project would also incorporate rooftop and covered parking lot photovoltaic (solar) arrays to meet the County's Zero Net Energy goal.

#### **2.4.3.5 Joint Trenching Intent Plan**

As a part of the electrical, gas, AT&T and Comcast service application to PG&E the electrical engineer would prepare a joint trench intent drawing to be provided with the application.

This joint trench intent plan would show the connection from the existing overhead electrical to the transformer and to the service points of connection and meter located inside the north wing of the Co-Housing building. The joint trench that runs between the Co-Housing building and the MHRCs would not be included in the PG&E service application.

After receipt and approval of the service application by PG&E the electrical engineer would prepare a joint trench/composite plan showing locations and trench sections of all joint trench locations and service connection details. This plan would only show the joint trench between the overhead point of connection to the transformer and to the meter room in the north wing of the Co-Housing building and would become a part of the final service application.

#### **2.4.4 Mid-Peninsula Regional Open Space District Easement**

The proposed stormwater drainage outfall improvement from the Cordilleras project site to Cordilleras Creek is located on property owned and managed by Mid-Peninsula Regional Open Space District (MROSD). In exchange for County access and management of the new outfall structure on MROSD property, the County would provide a parking easement on new parking spaces to be provided on Edmonds Road at the entrance to the CMHC site. The parking easement would provide shared parking on a first-come first-served basis to accommodate overflow trailhead parking for Pulgas Ridge Open Space Preserve. A County easement on MROSD property would be recorded with MROSD and would provide County access to the outfall. An exhibit of the proposed County and MROSD easements is shown in Figure 2-6 County and MROSD Easement.

## 2.5 PROJECT CONSTRUCTION

### 2.5.1 Construction Phasing and Patient Relocation

During the initial two phases of construction, all CMHC patients in the MHRC and Co-Housing treatment programs would remain in place (Figure 2-7 Phasing Plan). After the four MHRC buildings and Co-Housing building are completed, all Co-Housing patients and MHRC patients would move into these new facilities. After all patients relocate, the vacated CMHC building would be demolished and final site improvements including the fire access loop road and landscaping would be installed (Phases 3 and 4).

Construction is proposed to begin March 1, 2020 and continue until the end of November 2022. The new facility would be ready for occupancy by patients in December 2022. Project construction would occur sequentially in four main phases summarized in Table 2-3.

<b>Table 2-3 Construction Activity and Phasing</b>	
<b>Phase 1</b>	
<b><i>Site Preparation / Make Ready (March 1, 2020 – June 30, 2020)</i></b>	
Construction Activity	<ul style="list-style-type: none"> <li>• Grubbing and clearing the site</li> <li>• Staging of materials</li> </ul>
Equipment	<ul style="list-style-type: none"> <li>• 3 Rubber-tired bulldozers</li> <li>• 4 Tractors/Loaders/Backhoes</li> </ul>
Personnel	<ul style="list-style-type: none"> <li>• Average daily workers on site would be approximately 15 people.</li> </ul>
<b><i>Grading / Trenching (July 1, 2020 – December 3, 2020)</i></b>	
Construction Activity	<ul style="list-style-type: none"> <li>• Grading for MRHC building and supporting housing sites</li> <li>• Trenching for utilities</li> <li>• Net import of ~9,400 cu. yd. of fill</li> </ul>
Equipment	<ul style="list-style-type: none"> <li>• 2 Rubber-tired bulldozers</li> <li>• 2 Excavators</li> <li>• 2 Graders</li> <li>• 3 Tractors/Loaders/Backhoes</li> <li>• 1 Trencher</li> </ul>
Personnel	<ul style="list-style-type: none"> <li>• Average daily workers on site would be approximately 35 people</li> </ul>
<b>Phase 2</b>	
<b><i>Foundation Construction (January 1, 2021 – March 15, 2021)</i></b>	
Construction Activity	<ul style="list-style-type: none"> <li>• Construct all building foundations</li> <li>• Construct infrastructure for underground utilities</li> <li>• Staging of materials</li> </ul>
Equipment	<ul style="list-style-type: none"> <li>• 1 Excavator</li> <li>• Bore/Drill rig</li> <li>• 3 Tractors/Loaders/Backhoes</li> </ul>
Personnel	<ul style="list-style-type: none"> <li>• Average daily workers on site would be approximately 200 people.</li> </ul>
<b><i>Building Construction (January 1, 2021 – March 15, 2022)</i></b>	
Construction Activity	<ul style="list-style-type: none"> <li>• Superstructure of all buildings</li> <li>• Exterior skin and waterproofing</li> </ul>

	<ul style="list-style-type: none"> <li>• Interior framing and rough-in</li> </ul>
Equipment	<ul style="list-style-type: none"> <li>• 1 Crane</li> <li>• 3 Forklifts</li> <li>• 1 Generator set</li> <li>• 1 Aerial lift</li> <li>• 1 Welding set</li> <li>• Other Material Handling Equipment</li> </ul>
Personnel	<ul style="list-style-type: none"> <li>• Average daily workers on site would be approximately 200 people.</li> </ul>
<b>Architectural Coating (March 16, 2022 – March 31, 2022)</b>	
Construction Activity	<ul style="list-style-type: none"> <li>• Finish building exteriors</li> <li>• Final interior buildout</li> </ul>
Equipment	<ul style="list-style-type: none"> <li>• Air compressors</li> </ul>
Personnel	<ul style="list-style-type: none"> <li>• Average daily workers on site would be approximately 30 people.</li> </ul>
<b>Phase 3 &amp; 4</b>	
<b>Demolition &amp; Site Finishing (April 1, 2022 – November 30, 2022)</b>	
Construction Activity	<ul style="list-style-type: none"> <li>• Demolish/deconstruct ~70,000 sf of existing building space</li> <li>• Planting vegetation</li> <li>• Open Space Landscaping</li> <li>• Final site grading and utilities</li> <li>• Demobilization</li> </ul>
Equipment	<ul style="list-style-type: none"> <li>• 1 Crane</li> <li>• 3 Excavators</li> <li>• 2 Rubber-tired bulldozers</li> <li>• 1 Concrete saw</li> <li>• 1 Tractor/Loader/Backhoe</li> <li>• Other Material Handling Equipment</li> </ul>
Personnel	<ul style="list-style-type: none"> <li>• Average daily workers on site would be approximately 30 people.</li> </ul>

### 2.5.2 Construction Equipment and Staging

Construction activity and equipment requirements are shown in Table 2-3. Typical on-site equipment would include excavators, bulldozers backhoes, forklifts, and a water truck. Additional equipment would be brought in when needed such as concrete trucks, water trucks, semi-truck flat beds, cranes, etc. Work force on the project site would range from 15 at the preparation phase to 200 during the construction phase. The project could result in the import of 9,414 cubic yards of fill soil. Assuming 20 cubic yards per truck, importing 9,414 cubic yards of soil would generate 471 haul truck trips. An additional 20 trucks for deliveries are estimated to occur to and from the site for equipment mobilization and material deliveries.

Construction equipment and materials staging would occur on the project site within a fenced perimeter to control access and provide security. There will be a "just in time delivery" method for materials to limit the need for onsite staging. Parking for construction crews and CMHC employees would occur at several locations offsite with shuttle service to CMHC. The County will finalize a construction parking plan prior to start of construction activities. Preliminary locations include the following.

- Edmonds Road at Cordilleras site. Parking for County Health Services employees. Estimated capacity 20 cars.

- SamTrans turnout at Edmonds Road/Crestview Road. Valet-style stacked parking for County Health Services employees. Limited parking space may be provided for construction managers. Estimated capacity: 40 cars.
- Edgewood Road near I-280. Construction trade parking and staff overflow parking. Contracted Estimated capacity: 80 cars.
- Canada Road near Edgewood Road. Construction trade parking. Estimated capacity: 50 cars.

### **2.5.3 Site Clearing and Demolition**

Site clearing and demolition would begin after temporary utilities have been installed to keep the existing CMHC building operational. Unnecessary existing utility lines would be removed or abandoned in place. Parking, hardscapes, trees, vegetation, and miscellaneous site improvements occurring within the construction footprint of the new MHRC buildings would be removed. An estimated 239 trees located within the project footprint would be removed during site clearance work. The area immediately surrounding the existing CMHC building would be retained for building access and patient use until completion of the new MHRC buildings and patients have relocated (Figure 2-7, Phase 2).

Upon completion of the new project buildings and patient relocation, the existing CMHC building and remaining site improvements would be demolished (Figure 2-7, Phase 3). Prior to demolition of the existing CMHC building, materials containing asbestos and lead would be abatement for disposal per state requirements. The County Contractor would prepare a recycling program to meet County demolition recycling requirements. Additionally, any remedial soil work if required for removal of underground fuel storage tank would be conducted.

After removal of all hard materials the site would be cleared and grubbed and topsoil stockpiled for backfilling in landscape areas.

### **2.5.4 Earthwork and Grading**

The existing CMHC is set within a canyon basin and is surrounded by steep wooded hillsides. The CMHC is approximately 30 feet away from slopes at its closest point. Mass grading and soil nail walls would be constructed around the perimeter of the site to create a larger, flatter development area for the new MHRC buildings (Figure 2-8 Site Axonometric Views; Grading Plan in Appendix B, Sheets C0301 to C0306). MHRC building foundations would be graded into the hillside resulting in four MHRC buildings directly adjacent to near vertical slopes. Five soil nail walls would be installed to hold the slopes in place at a setback distance of approximately 15 feet from the MHRC buildings (Soil Nail Walls; Appendix B, Sheet C0901). The soil nail wall heights would vary with a maximum height of around 50 feet and a total area of approximately 19,100 sf. A set of design-build solicitation documents would be prepared for solicitation by the Construction Manager at Risk and would be completed during the design development phase. The site work would comprise an area of approximately 238,645 sf.

Cut slopes on the order of 50 feet high on the north side of the site are proposed. South side cut slopes would be approximately 36 feet high. Fill prisms on the order of 15 feet are proposed to contour the valley slope. Approximately 24,241 cubic yards of material would be removed from site. Approximately 33,834 cubic yards of fill would be brought in, with a net import total of roughly 9,414 cubic yards.



Earthwork and grading would be done by excavators and a bulldozer loading spoil into dumper trucks to haul spoil off site. Concrete retaining walls would be constructed to shore up earthen banks. Approximately 380 cubic yards of concrete would be used for the walls.

In addition to site grading, a debris catchment system is proposed on the north tributary to Cordilleras Creek as recommended by the geotechnical analysis for the project (ENGEO 2019). The system would be designed to contain a potential landslide deposit of 1,100 cubic yards of rock and soil from flowing down a steep ravine towards two MHRC buildings. The debris catchment system may involve anchoring fencing in two locations across the tributary channel – one above and one below the existing headwall (Appendix B; Sheets C0704 and C0705). An alternate design concept is to fill in the ravine and create three step pools to slow the channel flows to a continuous trickle. The final debris catchment system design would be subject to review and permitting by USACE, RWQCB, and CDFW and may be modified during the permit process.

### **2.5.5 Site Access and Safety During Construction**

Access to the Canyon Oaks Youth Center and the San Mateo County Fire Station 18 on the site would be maintained at all times during construction. Access to the existing buildings would be maintained utilizing fairly routine construction practices. There would be some traffic on the road in front of these buildings, but only during the period of constructing the north retaining wall and access road. The other impact would be the installation of the underground utilities in front of these buildings. The contractor would be required to maintain access to the existing buildings during this work.

The construction area would be fenced to keep people from casually entering the work site. If there is a concern that consumers may attempt to enter the site, a private security company could be hired to patrol the fenced area during off-hours and observe the entrance gates during operations. It would be the General Contractor's responsibility to maintain a safe project site.

Throughout the entire project, the construction superintendent would communicate daily with the County, Fire Station 18, Canyon Oaks Youth Center, and CMHC contacts on site, and receive advance clearance of any and all interruptions in site utilities. Additionally, the construction superintendent would communicate a daily, weekly and three-week look ahead schedule to keep the County, Fire Station 18, Canyon Oaks Youth Center, and CMHC informed at all times. Regular project briefings would occur for all constituents to include an overview of the project schedule and key milestone dates, the safety and security program, and discussion of the logistics and impacts of the project.

The continuous provision of security fences where needed to separate the construction area from the consumer/staff areas to assure safety and security for all.

## **2.6 ENVIRONMENTAL PROTECTION MEASURES INCORPORATED INTO PROJECT**

The proposed project would incorporate dust control measures and treatment of the existing CMHC building windows with acoustical materials to provide noise attenuation within the building interior during project construction. Laminated glass 1/4-inch thick would be applied to the window surface to reduce interior noise levels by 35 dB. The outdoor activity yard utilized provided to patients during project construction would be impacted by noise from construction

activity. The activity yard would be enclosed by fabric-covered chain-link fencing to provide a visual barrier to the construction activity.

The project team would require the General Contractor to continuously provide dust control by water spray or other measures during all phases of the project that may create airborne dust. This requirement would be monitored and enforced by the project team.

The County incorporates Best Management Practices (BMPs) into the planning, design, construction, operation and maintenance of its projects to minimize the potential adverse effects of the project on the surrounding community and the environment. The BMPs identified in Table 2-4 would be included in all Cordilleras project construction documents and are considered part of the project and not mitigation measures.

<b>Table 2-4 BMPs Incorporated into the Cordilleras Health System Replacement Project</b>	
<b>Air Quality</b>	<p>The County and/or its contractor shall implement the following BAAQMD Basic Construction Mitigation Measures during project construction:</p> <ol style="list-style-type: none"> <li>1) All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.</li> <li>2) All haul trucks transporting soil, sand, or other loose material off-site shall be covered.</li> <li>3) All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.</li> <li>4) All vehicle speeds on unpaved roads shall be limited to 15 mph.</li> <li>5) All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.</li> <li>6) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.</li> <li>7) All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specification. All equipment shall be checked by a certified visible emissions evaluator.</li> <li>8) Post a publicly visible sign with the telephone number and person to contact at the County Department of Public Works regarding dust complaints. The Department of Public Works or its contractor shall respond and take corrective action within 48 hours. The publicly visible sign shall also include the contact phone number for the Bay Area Air Quality Management District to ensure compliance with applicable regulations.</li> </ol>
<b>Cultural Resources</b>	<p>The County and/or its contractor shall implement the following Best Management Practices during project construction to avoid potential impacts on unanticipated and previously unknown cultural resources:</p> <ol style="list-style-type: none"> <li>1) In the event that any archaeological or paleontological resources are encountered at any time during construction, it will be the responsibility of the construction/project manager to stop work within 50 feet of any discovery and contact a qualified archaeologist. Work in the area shall be</li> </ol>

**Table 2-4 BMPs Incorporated into the Cordilleras Health System Replacement Project**

	<p>suspended until the archaeologist prepares a plan for the evaluation of the resource and the plan is submitted to the County for approval.</p> <p>2) Pursuant to Section 7050.5 of the Health and Safety Code and Section 5097.94 of the Public Resources Code of the State of California, in the event of the discovery of human remains during construction, the construction manager shall stop work and notify the San Mateo County Coroner. If the Coroner determines that the remains are not subject to his/her authority, he/she shall notify the Native American Heritage Commission (NAHC) who shall attempt to identify descendants of the deceased.</p>
<b>Storm Water and Drainage Control</b>	<p>The County and/or its contractor shall prepare and implement a stormwater and drainage control plan in compliance with the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), Provision C.3 of the County's Municipal Regional Stormwater NPDES Permit and any other County required provisions. The plan shall specify best management practices for the control and prevention of stormwater pollution. The plan shall address both construction-phase and post-construction pollutant impacts from development.</p> <p>Construction-phase measures shall include: erosion control measures such as installing fiber rolls, silt fences, gravel bags, or other erosion control devices around and/or downslope of work areas and around storm drains prior to earthwork and before the onset of any anticipated storm events; monitoring and maintaining all erosion and sediment control devices; designating a location away from storm drains when refueling or maintaining equipment; scheduling grading and excavation during dry weather; and removing vegetation only when absolutely necessary.</p> <p>Post-construction drainage controls shall be specified to capture and treat stormwater onsite.</p>
<b>Noise</b>	<p>The construction contractor shall implement measures to reduce the noise levels generated by construction equipment operating at the project site during project grading and construction phases. The construction contractor shall include in construction contracts the following requirements or measures shown in the sole discretion of the Community Development Director to be equally effective:</p> <ol style="list-style-type: none"> <li>1) Hours of construction activity shall be limited to Monday to Friday, from 7:00 AM to 6:00 PM, and Saturdays 9:00 AM to 5:00 PM in accordance with the County of San Mateo Ordinance Code.</li> <li>2) All construction equipment shall be equipped where feasible with improved noise muffling, and maintain the manufacturers' recommended noise abatement measures, such as mufflers, engine covers, and engine isolators in good working condition.</li> <li>3) Stationary construction equipment that generates noise levels in excess of 65 dBA Leq shall be located as far away from existing residential areas as possible.</li> <li>4) Heavy-duty vehicle storage and start-up areas shall be located as far away from occupied residences where feasible.</li> <li>5) All equipment shall be turned off if not in use for more than five minutes.</li> <li>6) Drilled piles or the use of sonic or vibratory pile drivers shall be used instead of impact pile drivers.</li> </ol>

**Table 2-4 BMPs Incorporated into the Cordilleras Health System Replacement Project**

	<p>Prior to the commencement of grading or construction at the project site, an information sign shall be posted at the entrance to each construction site that identifies the permitted construction hours and provides a telephone number to call and receive information about the construction project or to report complaints regarding excessive noise levels. The County and/or its contractor shall rectify all received complaints regarding non-compliant noise activities within 24 hours of their receipt.</p>
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## **2.7 PERMITS AND APPROVALS REQUIRED FOR THE PROJECT**

### **2.7.1 San Mateo County**

The following approvals are required by the County of San Mateo Board of Supervisors:

- 1) Certification of the Environmental Impact Report and approval of project findings pursuant to the California Environmental Quality Act.
- 2) Authorization of County funds to implement the project. The proposed project is a County sponsored project on County-owned property.

### **2.7.2 Responsible Agencies**

The following agencies have approval authority over the Cordilleras Health System Replacement Project and are considered responsible agencies under CEQA.

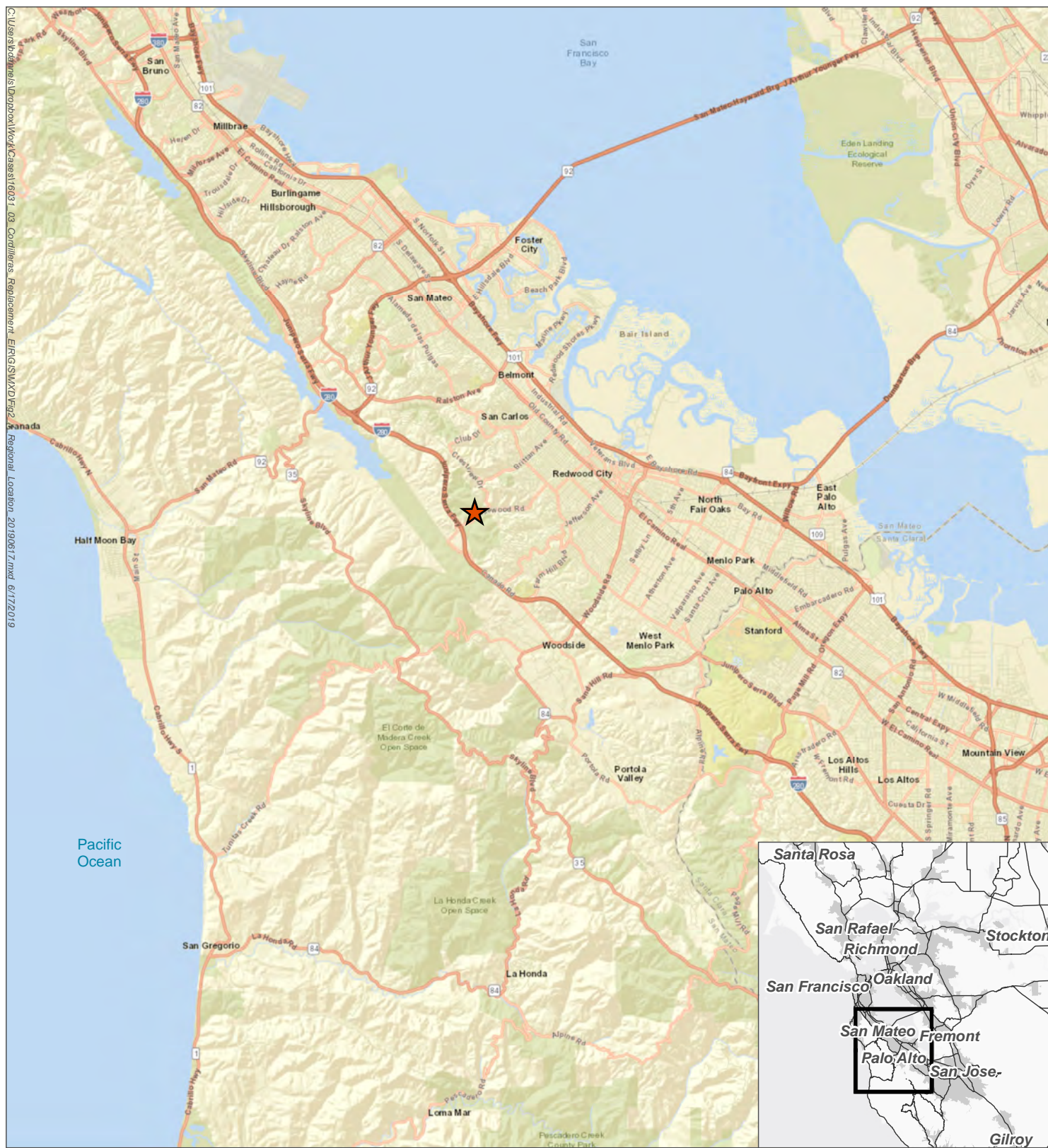
U.S. Army Corps of Engineers (USACE). Approval of a Section 404 Permit for removal and replacement of the existing culvert in Cordilleras Creek and for construction of an emergency access road crossing Cordilleras Creek.

Regional Water Quality Control Board (RWQCB). Issuance of a Section 401 Water Quality Certification of the Nationwide Permits issued by USACE. Site disturbance of greater than one requires approval of a Storm Water Pollution Prevention Plan (SWPPP) per the State's Construction General Permit.

California Department of Fish and Wildlife (CDFW). Approval of a Section 1602 Lake and Streambed Alteration Agreement for the proposed access road crossing of Cordilleras Creek and building encroachment within top of creek bank. Approval of relocation plan for San Francisco dusky-footed woodrat. Approval of mitigation measures for impacts to the riparian zone and San Francisco collinsia.

San Francisco Public Utility District (SFPUD). Approval of a lease agreement for use of SFPUD land for project construction equipment staging.

Mid-Peninsula regional Open Space District (MROSD). Approval of an easement for County access and maintenance of Cordilleras Creek outfall.



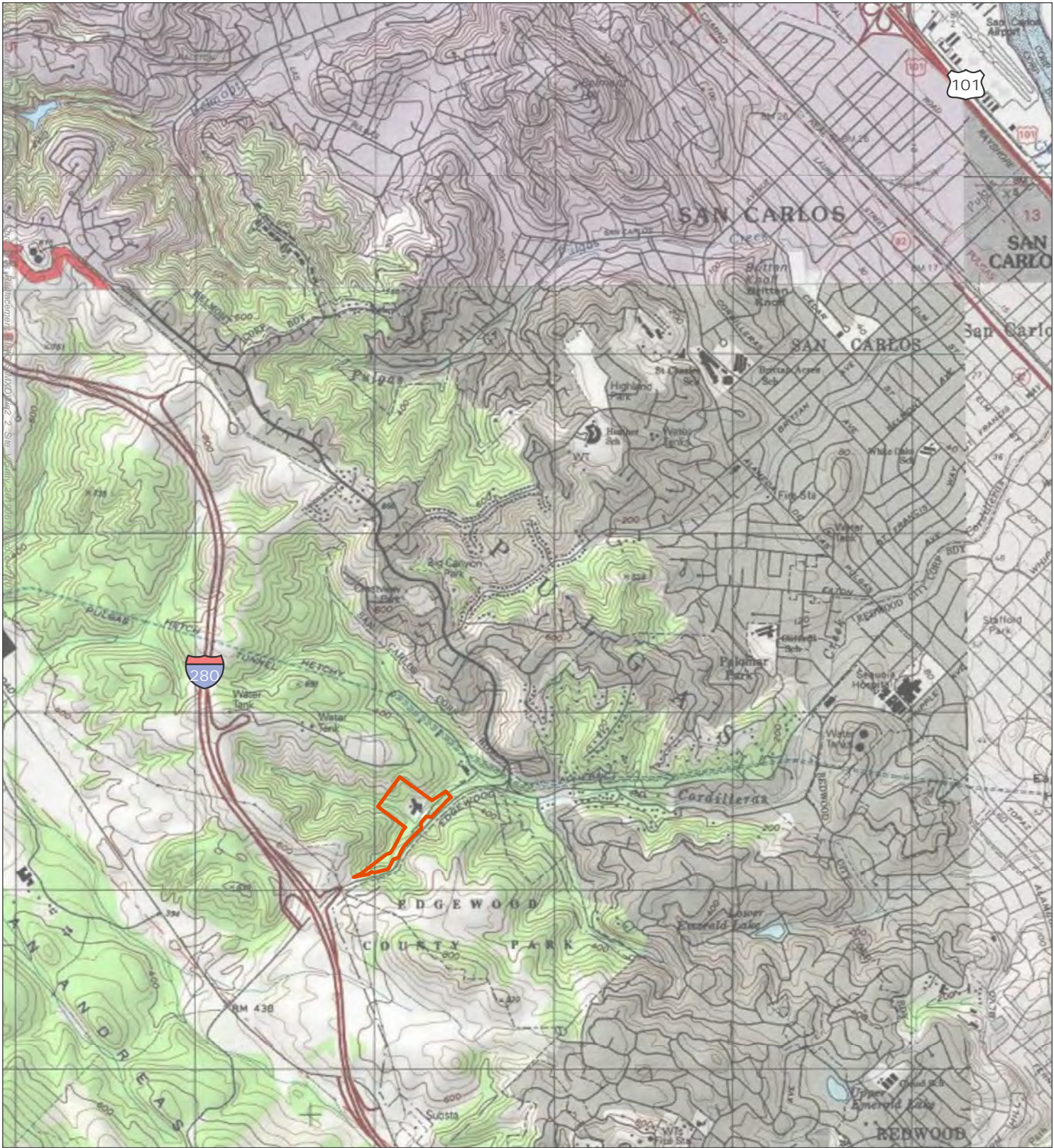
Source: ESRI, 2019; MIG, 2019




### Figure 2-1 Regional Location

*Cordilleras Mental Health Center Replacement Project*



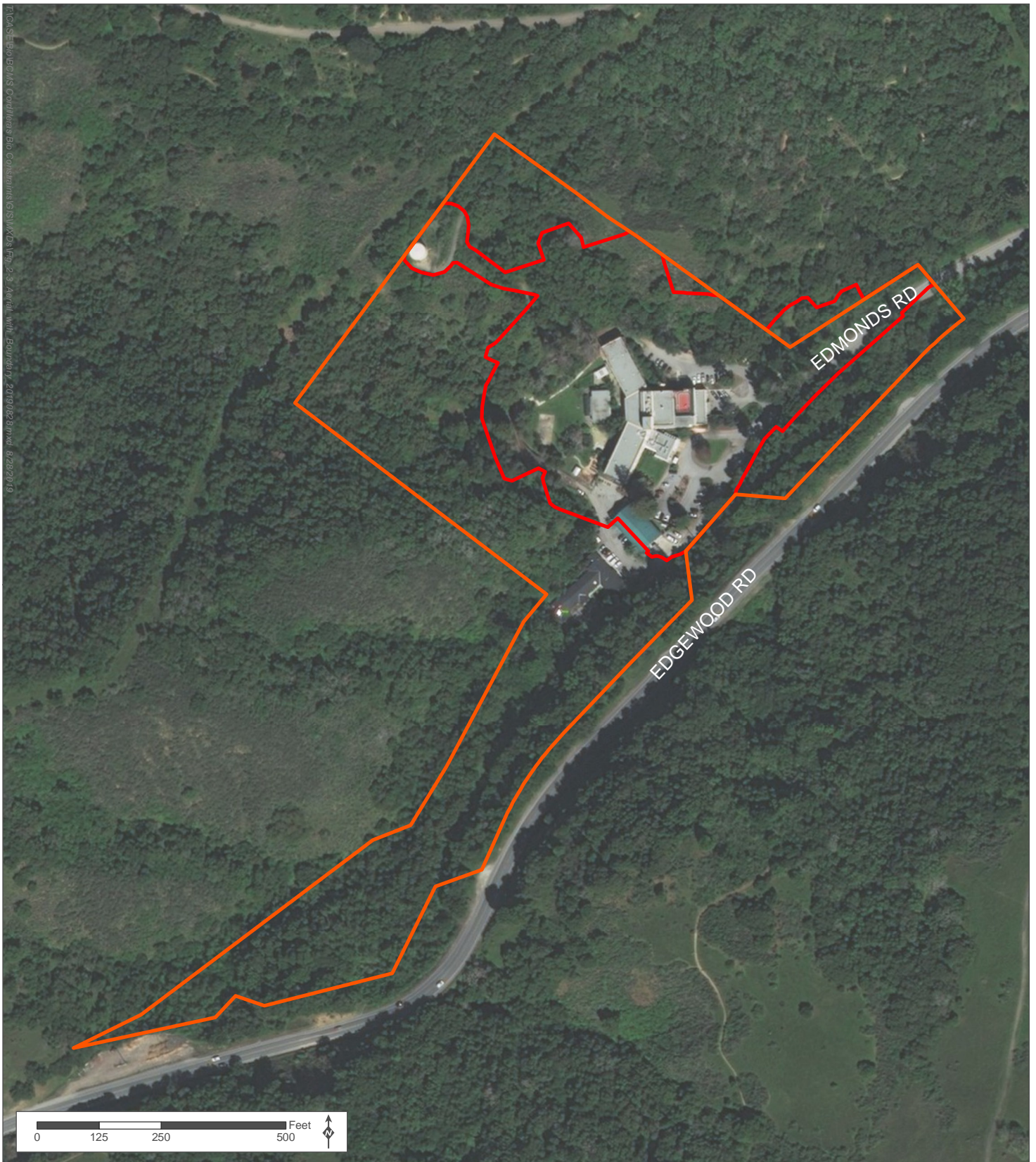


Source: ESRI, 2019; MIG, 2019



 Property Boundary







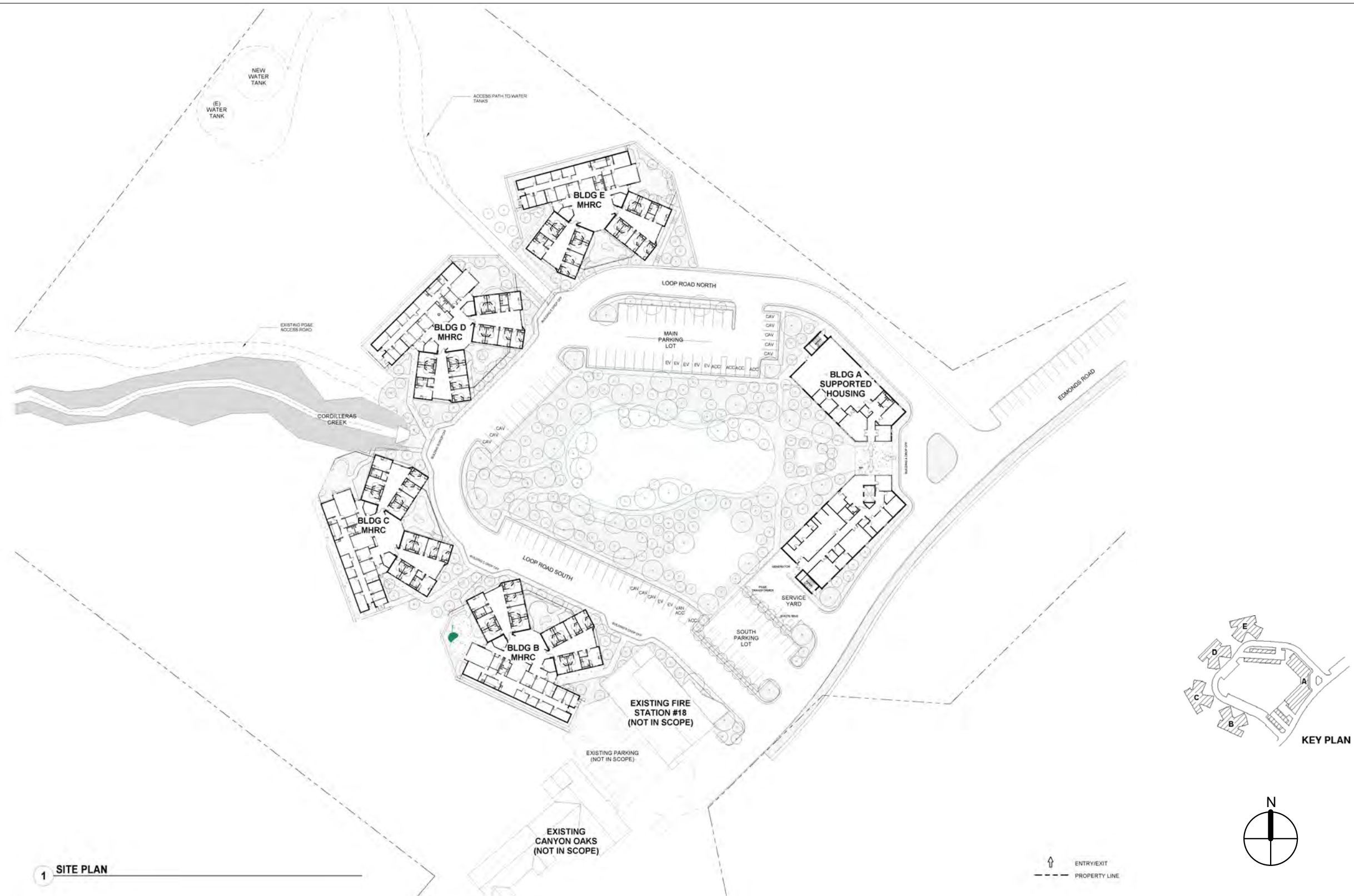
Source: ESRI 2016; MIG 2019

-  Property boundary
-  Project boundary

**Figure 2-3** Aerial Photograph with Survey Area Boundary

*Cordilleras Mental Health Center*



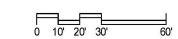


### Figure 2-4 Site Plan




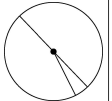



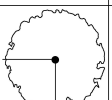
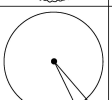

















Source: RHAA 2019


















**Figure 2-5 Landscape Plan**

*Cordilleras Mental Health Center Replacement Project*

PLANTING PALETTE									
SYM	ABBREVIATION	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	HEIGHT	SPREAD	WATER USE	FIRE RESISTANT
TREES									
	ACE CIR	ACER CIRCINATUM	VINE MAPLE	15 GAL	10'	15-30'	5-15'	LOW	YES
	ACE MAC	ACER MACROPHYLLUM	BIG LEAF MAPLE	15 GAL	30'	30-80'	30-60'	MODERATE	YES
	ARB MAR	ARBUTUS 'MARINA'	STRAWBERRY TREE	15 GAL	20'	20-40'	20-40'	LOW	YES
	CER OCC	CERCIS OCCIDENTALIS	WESTERN REDBUD	15 GAL	12'	10-20'	10-15'	LOW	YES
	MYR CAL	MYRICA CALIFORNICA	PACIFIC WAX MYRTLE	15 GAL	10' O.C.	20-30'	10-20'	LOW	YES
	PLA RAC	PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	15 GAL	30'	30-80'	20-50'	MODERATE	YES
	QUE AGR	QUERCUS AGRIFOLIA	COAST LIVE OAK	24" BOX	30'	40'	30'	VERY LOW	YES
	QUE LOB	QUERCUS LOBATA	VALLEY OAK	24" BOX	30'	40'	30'	LOW	YES
	SAL LAS	SALIX LASIOLEPIS	ARROYO WILLOW	36" BOX	15'	10-35'	15'	MODERATE	YES
	SEQ SEM	SEQUOIA SEMPERVIRENS	COAST REDWOOD	24" BOX	15'	60'	30'	HIGH	YES
LOW WATER USE PLANTING									
SYMBOL	ABBR.	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	HEIGHT	SPREAD	WATER USE	FIRE RESISTANT
	ARC EME	ARCTOSTAPHYLOS 'EMERALD CARPET'	CARPET MANZANITA	1 GAL	5' O.C.	<1'	3-5'	LOW	YES
	ARC MAN	ARCTOSTAPHYLOS MANZANITA 'DR. HURD'	DR. HURD MANZANITA	5 GAL	8' O.C.	12-15'	12-15'	LOW	YES
	ARC PIL	ARCTOSTAPHYLOS PILOSULA	LA PANZA MANZANITA	5 GAL	6' O.C.	3-6'	3-6'	LOW	YES
	CAR DIV	CAREX DIVULSA	BERKELEY SEDGE	5 GAL	18" O.C.	1-2'	1-2'	LOW	YES
	CEA BLU	CEANOTHUS 'BLUE LOLITA'	CALIFORNIA LILAC	1 GAL	48" O.C.	2-3'	6-8'	LOW	YES
	CEA HEA	CEANOTHUS HEARSTIURUM	HEARST RANCH BUCKBRUSH	1 GAL	6' O.C.	<1'	6-8'	MODERATE	YES
	CHO TEC	CHONDRPETALUM TECTORUM	SMALL CAPE RUSH	5 GAL	48" O.C.	2-3'	3-4'	LOW	YES
	COR SER	CORNUS SERICEA	RED TWIG DOGWOOD	15 GAL	5' O.C.	4-13'	9'-15'	LOW	YES
	ERI WAY	ERIGERON 'WAYNE RODERICK'	WAYNE RODERICK DAISY	5 GAL	2' O.C.	1'	1-2'	LOW	YES
	FES CAL	FESTUCA CALIFORNICA	CALIFORNIA FESCUE	1 GAL	12" O.C.	2-3'	1-2'	LOW	YES
	HEU MAX	HEUCHERA MAXIMA	ISLAND ALUM ROOT	1 GAL	18" O.C.	1'	1-2'	MODERATE	YES
	IRI DOU	IRIS DOUGLASIANA	DOUGLAS IRIS	1 GAL	18" O.C.	1-2'	2-3'	LOW	YES
	JUN PAT	JUNCUS PATENS	COMMON RUSH	5 GAL	24" O.C.	1-3'	3'	LOW	YES
	LAV SPP	LAVANDULA ANGUSTIFOLIA	ENGLISH LAVENDER	5 GAL	24" O.C.	1-3'	1-3'	LOW	YES
	LEY CON	LEYMUS CONDENSATUS 'CANYON PRINCE'	CANYON PRINCE WILD RYE	5 GAL	24" O.C.	3-4'	3'	LOW	YES
	MAH REP	MAHONIA REPENS	CREEPING MAHONIA	1 GAL	24" O.C.	2-3'	5'	LOW	YES
	MIM AUR	MIMULUS AURANTIACUS	STICKY MONKEY FLOWER	5 GAL	36" O.C.	3-5'	3'-5'	LOW	YES
	MON VIL	MONARDELLA VILLOSA	COYOTE MINT	5 GAL	36" O.C.	1-2'	1-3'	VERY LOW	YES
	PEN HET	PENSTEMON HETEROPHYLLUS 'MARGARITA BOP'	BLUE BEDDER	1 GAL	24" O.C.	1-3'	1-2'	LOW	YES
	POL MUN	POLYSTICHUM MUNITUM	CALIFORNIA SWORD FERN	1 GAL	24" O.C.	2-3'	2-4'	LOW	YES
	RHA CAL	RHAMNUS CALIFORNICA 'MOUND S.B'	COFFEEBERRY	5 GAL	48" O.C.	6-8'	6-8'	LOW	YES
	RIB MAL	RIBES MALVACUM	CHAPARRAL CURRANT	5 GAL	36" O.C.	6-12'	4-6'	LOW	YES
	RIB SAN	RIBES SANGUINEUM	RED FLOWERING CURRENT	5 GAL	48" O.C.	6'-13'	7'	LOW	YES
	SAL CLE	SALVIA CLEVELANDII	CALIFORNIA BLUE SAGE	1 GAL	48" O.C.	3-5'	5-8'	LOW	YES
	ZAU CAL	ZAUSCHNERIA CALIFORNICA	CALIFORNIA FUSCHIA	1 GAL	24" O.C.	1-2'	2-3'	LOW	YES

Source: County of San Mateo PDU, CannonDesign, RHAA

STORMWATER TREATMENT PLANTING									
SYMBOL	ABBR.	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	HEIGHT	SPREAD	WATER USE	FIRE RESISTANT
	ACH MIL	ACHILLEA MILLEFOLIUM	YARROW	1 GAL	24" O.C.	2-3'	2-3'	LOW	YES
	CAR TUM	CAREX TUMULICOLA	BERKELEY SEDGE	1 GAL	18" O.C.	1-2'	1-2'	LOW	YES
	CAR CAL	CARPENTERIA CALIFORNICA	BUSH ANEMONE	5 GAL	6' O.C.	6-8'	4-5'	MODERATE	YES
	CHO TEC	CHONDRPETALUM TECTORUM	SMALL CAPE RUSH	5 GAL	48" O.C.	2-3'	3-4'	LOW	YES
	COR CAL	CORYLUS CORNUTA CALIFORNICA	WESTERN HAZELNUT	5 GAL	8' O.C.	9-12'	6-9'	LOW	YES
	DES CES	DESCHAMPSIA CESPITOSA	TUFTED HAIR GRASS	1 GAL	24" O.C.	2-3'	1-2'	MODERATE	YES
	RIB SAN	RIBES SANGUINEUM	RED FLOWERING CURRENT	5 GAL	4' O.C.	6'-13'	7'	LOW	YES
	COR SER	CORNUS SERICEA	RED TWIG DOGWOOD	15 GAL	5' O.C.	4-13'	9'-15'	LOW	YES
	FES CAL	FESTUCA CALIFORNICA	CALIFORNIA FESCUE	1 GAL	24" O.C.	2-3'	1-2'	LOW	YES
	IRI CAN	IRIS PCH 'CANYON SNOW'	PACIFIC COAST HYBRID IRIS	1 GAL	12" O.C.	2-3'	1-2'	LOW	YES
	JUN PAT	JUNCUS PATENS	CALIFORNIA GREY RUSH	1 GAL	24" O.C.	1-2'	1-2'	LOW	YES
	MIM AUR	MIMULUS AURANTIACUS	STICKY MONKEY FLOWER	5 GAL	36" O.C.	3-5'	3'-5'	LOW	YES
	MUH RIG	MUHLENBERGIA RIGENS	DEER GRASS	5 GAL	36" O.C.	3-5'	3-4'	LOW	YES
HYDROSEED MEADOW MIX									
SYMBOL	ABBR.	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	HEIGHT	SPREAD	WATER USE	FIRE RESISTANT
		HYDROSEED MEADOW MIX		SEED				LOW	
SEEDED TURF									
SYMBOL	ABBR.	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	HEIGHT	SPREAD	WATER USE	FIRE RESISTANT
		PLUSH TALL FESCUE BLEND		SEED	400 LBS/AC			MODERATE	


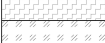






















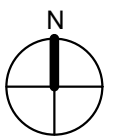
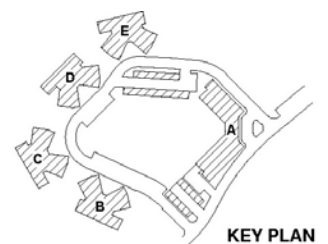
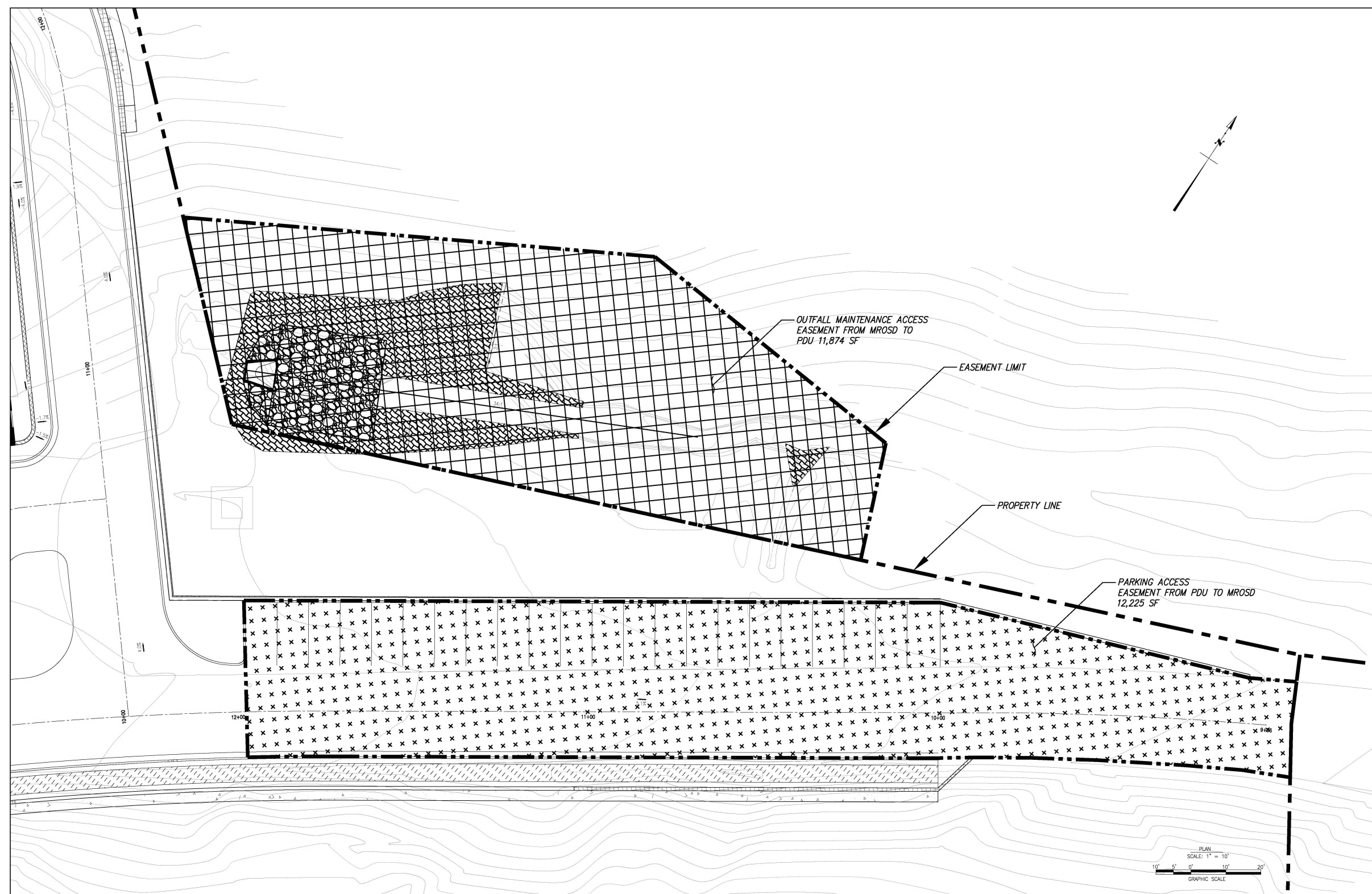
COURTYARD									
SYMBOL	ABBREVIATION	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	HEIGHT	SPREAD	WATER USE	FIRE RESISTANT
SHRUBS									
	ALL SCH	ALLIUM SCHOENOPRASUM	CHIVES	1 GAL	12" O.C.	12"	12"	MODERATE	YES
	ART SCH	ARTEMISIA SCHMIDTIANA 'SILVER MOUND'	SILVER MOUND ARTEMISIA	1 GAL	12" O.C.	<1'	1-1.5'	LOW	YES
	CEA HEA	CEANOTHUS HEARSTIURUM	HEARST RANCH BUCKBRUSH	1 GAL	6' O.C.	<1'	6-8'	MODERATE	YES
	ECH PUR	ECHINACEA PURPUREA	PURPLE CONEFLOWER	1 GAL	24"O.C.	2-5'	1.5-2'	MODERATE	YES
	HEU MAX	HEUCHERA MAXIMA	ISLAND ALUM ROOT	1 GAL	18"O.C.	1'	1-2'	MODERATE	YES
	FAT JAP	FATSIA JAPONICA 'VARIEGATA'	VARIEGATED JAPANESE ARALIA	5 GAL	5' O.C.	6-10'	4-6'	MODERATE	YES
	LAV ANG	LAVANDULA ANGUSTIFOLIA	ENGLISH LAVENDER	5 GAL	24" O.C.	1-3'	1-3'	LOW	YES
	MIM AUR	MIMULUS AURANTIACUS	STICKY MONKEY FLOWER	5 GAL	36" O.C.	3-5'	3'-5'	LOW	YES
	ROS OFF	ROSMARINUS OFFICINALIS	ROSEMARY	5 GAL	24" OC	2-6'	2-4'	LOW	YES
	SAR HOO	SARCOCOCCA HOOKERANA HUMILIS	HIMALAYAN SWEET BOX	5 GAL	36" OC	1-2'	2-4'	LOW	YES
	STY BYZ	STACHYS BYZANTINA	LAMBS' EARS	1 GAL	12" O.C.	1-1.5'	1-1.5'	LOW	YES
	THY VUL	THYMUS VULGARIS	THYME	1 GAL	12" O.C.	12"	12"	LOW	YES
GRASSES									
	CAR DIV	CAREX DIVULSA	BERKELEY SEDGE	1 GAL	24" O.C.	18"	2'	LOW	YES
	CAL NUT	CALAMAGROSTIS NUTKAENSIS	PACIFIC REED GRASS	1 GAL	36" O.C.	3-5'	1-2'	LOW	YES
	DIE BIC	DIETES BICOLOR	FORNIIGHT LILY	5 GAL	36" O.C.	2-3'	2-3'	MODERATE	YES
	CHO TEC	CHONDRPETALUM TECTORUM	CAPE RUSH	5 GAL	48" O.C.	3-4'	3-4'	LOW	YES
	JUN ELK	JUNCUS PATENS 'ELK BLUE'	ELK BLUE GRAY RUSH	1 GAL	24" O.C.	18"-30"	1-2'	LOW	YES
	LOM LON	LOMANDRA LONGIFOLIA 'BREEZE'	DWARF MAT RUSH	1GAL	36" O.C.	2-3'	3'	LOW	YES
	LOM PLA	LOMANDRA 'PLATINUM BEAUTY'	VARIEGATED MAT RUSH	1GAL	24" O.C.	36"	2-3'	LOW	YES
	MUH LIN	MUHLENBERGIA LINDHEIMERI	BIG MUHLY	5 GAL	24" O.C.	3-5'	3-4'	LOW	YES
	MUH RIG	MUHLENBERGIA RIGENS	DEER GRASS	5 GAL	36" O.C.	3-5'	3-4'	LOW	YES
	OPH JAP	OPHIOPOGON JAPONICUS	MONDO GRASS	1 GAL	12" O.C.	12"	6-8"	MODERATE	YES
FERNS									
	NEP COR	NEPHROLEPIS CORDIFOLIA	NARROW SWORD FERN	5 GAL	24" O.C.	2-3'	2-3'	MODERATE	YES
	POL MUN	POLYSTICHUM MUNITUM	WESTERN SWORD FERN	5 GAL	48" O.C.	3-6'	3-6'	MODERATE	YES
	WOO FIM	WOODWARDIA FIMBRIATA	GIANT CHAIN FERN	5 GAL	5' O.C.	4-6'	4-6'	MODERATE	YES

Figure 2-5 Planting Schedule

Cordilleras Mental Health Center Replacement Project

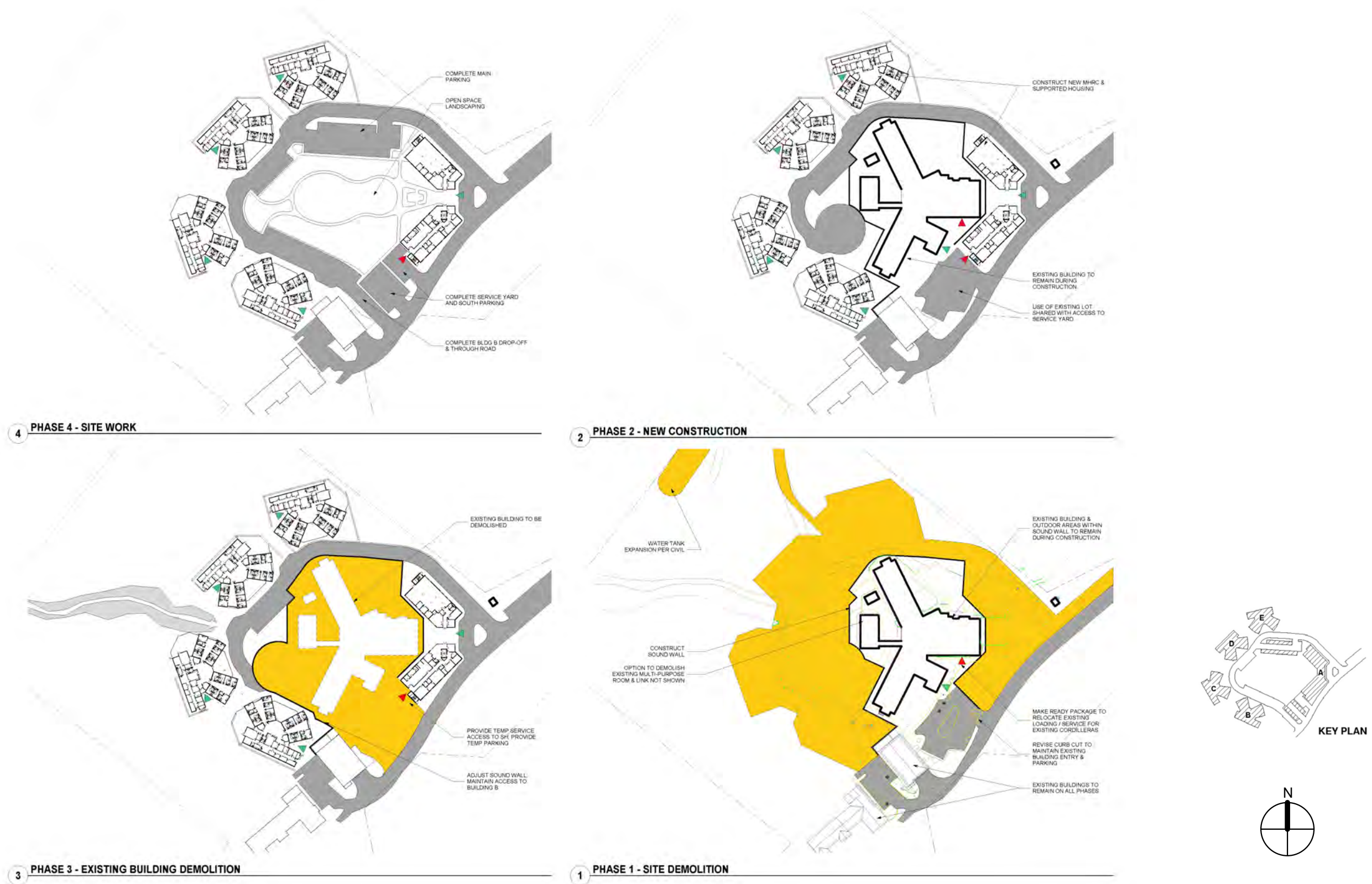




Source: County of San Mateo PDU, CannonDesign, KPFF; 15 March 2019

**Figure 2-6 MROSD Easement**

*Cordilleras Mental Health Center Replacement Project*



Source: County of San Mateo PDU, CannonDesign, KPFF, RHAA, Cini Little International, Inc.; 15 March 2019

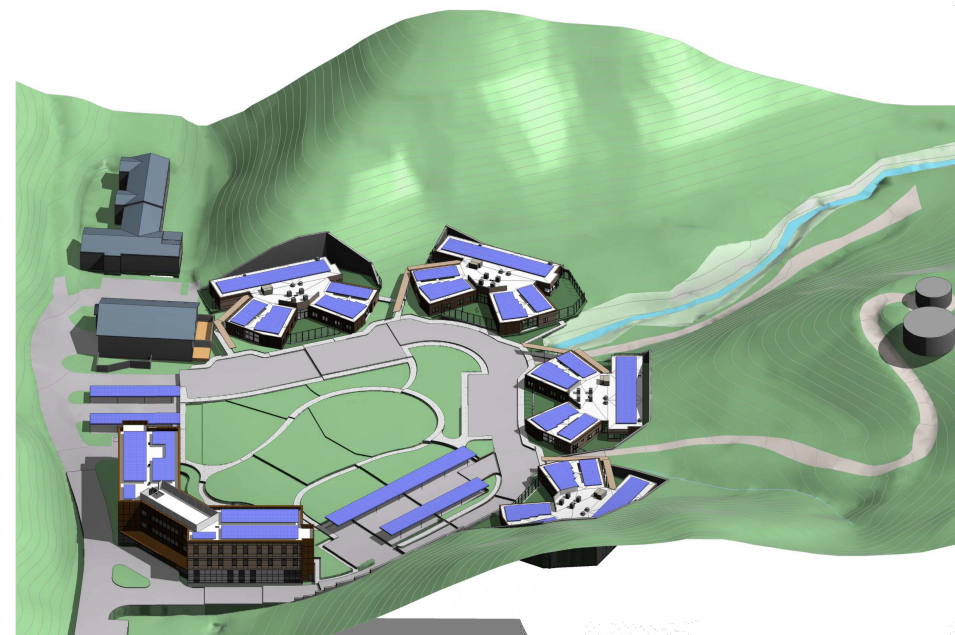




3 SITE AXONOMETRIC, EAST



2 SITE AXONOMETRIC, SOUTH WEST



1 SITE AXONOMETRIC, NORTH EAST

Source: County of San Mateo PDU, CannonDesign, KPFF; 15 March 2019

**Figure 2-8 Site Axonometric Views**

*Cordilleras Mental Health Center Replacement Project*

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## CHAPTER 3 AIR QUALITY

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### 3.1 REGULATORY SETTING

#### 3.1.1 Federal and State Clean Air Acts

The federal Clean Air Act, as amended, provides the overarching basis for both federal and state air pollution prevention, control, and regulation. The Clean Air Act establishes the U.S. Environmental Protection Agency's (U.S. EPA) responsibilities for protecting and improving the nation's air quality. The U.S. EPA oversees federal programs for setting air quality standards and designating attainment status, permitting new and modified stationary sources of pollutants, controlling emissions of hazardous air pollutants, and reducing emissions from motor vehicles and other mobile sources. The U.S. EPA also requires that each state prepare and submit a State Implementation Plan (SIP) that consists of background information, rules, technical documentation, and agreements that an individual state will use to attain compliance with the National Ambient Air Quality Standards (NAAQS) within federally-imposed deadlines. State and local agencies implement the plans and rules associated with the SIP, but the rules are also federally enforceable.

In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California Clean Air Act. In California, both the federal and state Clean Air acts are administered by the California Air Resources Board (CARB). It sets all air quality standards including emission standards for vehicles, fuels, and consumer goods as well as monitors air quality and sets control measures for toxic air contaminants. CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional level.

#### 3.1.2 CARB Regulation for In-Use Off-Road Diesel-Fueled Fleets

CARB's Regulation for In-Use Off-Road Diesel-Fueled Fleets operating in California is intended to reduce emissions of NO<sub>x</sub> and PM from off-road diesel vehicles, including construction equipment. The regulation imposes limits on idling; requires reporting equipment and engine information and labeling all vehicles reported; restricts adding older vehicles to fleets; and requires fleets to reduce their emissions by retiring, replacing, or repowering older engines or installing exhaust retrofits for PM. The requirements and compliance dates of the off-road regulation vary by fleet size, and large fleets (fleets with more than 5,000 hp) must meet average targets or comply with Best Available Control Technology requirements beginning in 2014. In general, Year 2020 NO<sub>x</sub> emission rate targets for large and medium fleets set by this regulation fall between the EPA's Tier III and Tier IV Interim standards for equipment between 100 and 750 hp.

#### 3.1.3 CARB Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and Other Criteria Pollutants from In-Use Heavy-Duty Diesel-Fueled Vehicles

CARB's Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and Other Criteria Pollutants from In-Use Heavy-Duty Diesel-Fueled Vehicles (also known as the Truck and Bus Regulation) is intended to reduce emissions of NO<sub>x</sub>, PM, and other criteria pollutants generated from existing on-road diesel vehicles operating in California. The regulation applies to nearly all diesel-fueled trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds that are privately or federally owned, and for privately and publicly owned school buses. Heavier trucks and buses with a GVWR greater than 26,000 pounds must

comply with a schedule by engine model year or owners can report to show compliance with more flexible options. By 2023, all trucks and buses must have at least 2010 model year engines with few exceptions.

### **3.1.4 CARB Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater**

In 1998, CARB identified diesel particulate matter (DPM) as a TAC. To reduce public exposure to DPM, in 2000, CARB approved the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (Risk Reduction Plan; CARB 2000). This plan implements control measures to reduce DPM, such as the Airborne Toxic Control Measure (ATCM) for stationary diesel-fueled engines. As such, diesel generators must comply with regulations under CARB's amendments to *Airborne Toxic Control Measure for Stationary Compression Ignition Engines* and be permitted by the Bay Area Air Quality Management District (BAAQMD).

### **3.1.5 CARB Airborne Toxic Control Measure for Stationary Compression Ignition Engines**

CARB's ATCM for Stationary Compression Ignition Engines (17 CCR §93115) reduces DPM and other emissions from stationary diesel-fueled compression ignition engines by imposing operating requirements and strict emissions standards on these engines.

### **3.1.6 Bay Area Air Quality Management District (BAAQMD)**

The BAAQMD is the agency primarily responsible for maintaining air quality and regulating emissions of criteria and toxic air pollutants within the SFBAAB. The BAAQMD carries out this responsibility by preparing, adopting, and implementing plans, regulations, and rules that are designed to achieve attainment of state and national air quality standards.

#### **3.1.6.1 Rules and Regulations**

The BAAQMD currently has 13 regulations containing more than 100 rules that control and limit emissions from sources of pollutants. Table 3-1 below presents the major BAAQMD rules and regulation that may apply to the proposed project.

<b>Table 3-1 Potentially Applicable BAAQMD Rules and Regulations</b>	
<b>Regulation and Rule</b>	<b>Description</b>
<b><i>Regulation 2 (Permits)</i></b>	
Rule 1 – General Requirements	Includes criteria for issuance or denial of permits, exemptions, and appeals against decisions of the District actions on applications.
Rule 2 – New Source Review	Provides for the review of new and modified sources of pollutants; requires use of Best Available Control Technology and emissions offsets to achieve no net increase in nonattainment pollutants; implements Prevention of Significant Deterioration review for attainment pollutants.
Rule 5 – New Source Review of TACs	Applies preconstruction permit review to new and modified sources of toxic air contaminants; contains project health risk limits and requirements for Toxics Best Available Control Technology.



<b>Table 3-1 Potentially Applicable BAAQMD Rules and Regulations</b>	
<b>Regulation and Rule</b>	<b>Description</b>
<b><i>Regulation 6 (Particulate Matter)</i></b>	
1 – General Requirements	Limits the quantity of particulate matter in the atmosphere by controlling emission rates, concentration, visible emissions and opacity.
6 – Prohibition of Trackout	Addresses fugitive road dust emissions associated with trackout.
Regulation 7 (Odorous Substances)	Establishes general limitations on odorous substances and specific emission limitations on certain odorous compounds.
<b><i>Regulation 8 (Organic Compounds)</i></b>	
Rule 3 – Architectural Coatings	Limits the quantity of volatile organic compounds in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the BAAQMD.
Rule 5 – Storage of Organic Liquids	Limits emissions of organic compounds from storage tanks.
Rule 7 – Gasoline Dispensing Facilities	Limits emissions of organic compounds from gasoline dispensing facilities.
Rule 40 – Aeration of Contaminated Soil and Removal of Underground Storage Tanks	Limits emissions of organic compounds from soil that has been contaminated by organic chemical or petroleum chemical leaks or spills.
Rule 47 – Air Stripping and Soil Vapor Extraction Operations	Limits emissions of organic compounds from contaminated groundwater and soil; applies to new and modified air stripping and soil vapor extraction equipment used for the treatment of groundwater or soil contaminated with organic compounds.
<b><i>Regulation 9 (Inorganic Gaseous Pollutants)</i></b>	
Rule 8 – NO <sub>x</sub> and CO from Stationary Internal Combustion Engines	Limits emissions of NO <sub>x</sub> and CO from stationary internal gas combustion engines more than 50 brake horsepower.
<b><i>Regulation 11 (Hazardous Pollutants)</i></b>	
Rule 2 – Asbestos Demolition, Renovation, and Manufacturing	Controls emissions of asbestos to the atmosphere during demolition.
<b><i>Regulation 14 (Mobile Source Emissions Reduction Measures)</i></b>	
Rule 1 – Bay Area Commuter Benefits Program	Requires employers with 50 or more full-time employees in the Bay Area to provide commuter benefits to their employees.
Source: BAAQMD, 2019	

### 3.1.6.2 2017 Clean Air Plan

On April 29, 2017, the BAAQMD adopted its *Spare the Air-Cool the Climate 2017 Clean Air Plan* (Clean Air Plan). The 2017 Clean Air Plan updates the most recent Bay Area ozone plan, the 2010 Clean Air Plan, in fulfillment of state ozone planning requirements. Over the next 35 years, the Clean Air Plan will focus on the three following goals:

- Attain all state and national quality standards;

- Eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants; and
- Reduce Bay Area GHG Emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050.

The Clean Air Plan includes 85 distinct control measures to help the region reduce air pollutants and has a long-term strategic vision which forecasts what a clean air Bay Area will look like in the year 2050. The control measures aggressively target the largest source of GHG, ozone pollutants, and particulate matter emissions – transportation. The 2017 Plan includes more incentives for electric vehicle infrastructure, off-road electrification projects such as Caltrain and shore power at ports, and reducing emissions from trucks, school buses, marine vessels, locomotives, and off-road equipment (BAAQMD 2017a).

### 3.1.7 County of San Mateo General Plan

The County of San Mateo’s General Plan Energy and Climate Change Element contains the following policies related to air quality:

- **Goal 2: Maximize energy efficiency in new and existing development.**  
Policy 2.5: Continue implementation of green building standards that exceed state energy efficiency standards.
- **Goal 3: Promote the expansion of the use of renewable energy supplies.**  
Policy 3.1: Identify opportunities for new and existing development to incorporate on-site distributed energy resources into project design and construction.
- **Goal 4: Promote and implement policies and programs to reduce vehicle miles traveled by all vehicles traveling in the unincorporated county.**  
Policy 4.2: Promote non-motorized and alternative travel.
- **Goal 5: Encourage the use of clean, low-emissions vehicles and equipment.**  
Policy 5.1: Facilitate the expansion of infrastructure for alternative fuel vehicles.

## 3.2 ENVIRONMENTAL SETTING

Air quality is a function of pollutant emissions and topographic and meteorological influences. The physical features and atmospheric conditions of a landscape interact to affect the movement and dispersion of pollutants and determine its air quality.

### 3.2.1 Regulated Air Pollutants

The U.S. EPA has established NAAQS for six common air pollutants: ozone (O<sub>3</sub>), PM, which consists of “inhalable coarse” PM (particles with an aerodynamic diameter between 2.5 and 10 microns in diameter, or PM<sub>10</sub>) and “fine” PM (particles with an aerodynamic diameter smaller than 2.5 microns, or PM<sub>2.5</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and lead. The U.S. EPA refers to these six common pollutants as “criteria” pollutants because the agency regulates the pollutants on the basis of human health and/or environmentally-based criteria.

CARB has established California Ambient Air Quality Standards (CAAQS) for the six common air pollutants regulated by the federal Clean Air Act (the CAAQS are more stringent than the

NAAQS) plus the following additional air pollutants: hydrogen sulfide (H<sub>2</sub>S), sulfates (SO<sub>x</sub>), vinyl chloride, and visibility reducing particles.

A description of the air pollutants associated with the proposed project and its vicinity is provided below. Air pollutants not commonly associated with the existing or proposed sources in the vicinity of the project site, such as lead and visibility reducing particles, are not described below.

- **Ground-level Ozone**, or smog, is not emitted directly into the atmosphere. It is created from chemical reactions between NO<sub>x</sub> and volatile organic compounds (VOCs), also called reactive organic gases (ROG), in the presence of sunlight (U.S. EPA 2017). Thus, ozone formation is typically highest on hot sunny days in urban areas with NO<sub>x</sub> and ROG pollution. Ozone irritates the nose, throat, and air pathways and can cause or aggravate shortness of breath, coughing, asthma attacks, and lung diseases such as emphysema and bronchitis.
- **Particulate Matter**, also known as particle pollution, is a mixture of extremely small solid and liquid particles made up of a variety of components such as organic chemicals, metals, and soil and dust particles (U.S. EPA 2016a).
  - PM<sub>10</sub>, also known as inhalable coarse, respirable, or suspended PM<sub>10</sub>, consists of particles less than or equal to 10 micrometers in diameter (approximately 1/7<sup>th</sup> the thickness of a human hair). These particles can be inhaled deep into the lungs and possibly enter the blood stream, causing health effects that include, but are not limited to, increased respiratory symptoms (e.g., irritation, coughing), decreased lung capacity, aggravated asthma, irregular heartbeats, heart attacks, and premature death in people with heart or lung disease (U.S. EPA 2016a).
  - PM<sub>2.5</sub>, also known as fine PM, consists of particles less than or equal to 2.5 micrometers in diameter (approximately 1/30<sup>th</sup> the thickness of a human hair). These particles pose an increased risk because they can penetrate the deepest parts of the lung, leading to and exacerbating heart and lung health effects (U.S. EPA 2016a).
- **Carbon Monoxide (CO)** is an odorless, colorless gas that is formed by the incomplete combustion of fuels. Motor vehicles are the single largest source of carbon monoxide in the Bay Area. At high concentrations, CO reduces the oxygen-carrying capacity of the blood and can aggravate cardiovascular disease and cause headaches, dizziness, unconsciousness, and even death (U.S. EPA 2016b).
- **Nitrogen Dioxide (NO<sub>2</sub>)** is a by-product of combustion. NO<sub>2</sub> is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO<sub>2</sub> are collectively referred to as NO<sub>x</sub> and are major contributors to ozone formation. NO<sub>2</sub> also contributes to the formation of particulate matter. NO<sub>2</sub> can cause breathing difficulties at high concentrations (U.S. EPA 2016c).
- **Sulfur Dioxide (SO<sub>2</sub>)** is one of a group of highly reactive gases known as oxides of sulfur (SO<sub>x</sub>). Fossil fuel combustion in power plants and industrial facilities are the largest emitters of SO<sub>2</sub>. Short-term effects of SO<sub>2</sub> exposure can include adverse respiratory effects such as asthma symptoms. SO<sub>2</sub> and other SO<sub>x</sub> can react to form PM (U.S. EPA 2016d).

- **Sulfates ( $\text{SO}_4^{2-}$ )** are the fully oxidized ionic form of sulfur.  $\text{SO}_4^{2-}$  are primarily produced from fuel combustion. Sulfur compounds in the fuel are oxidized to  $\text{SO}_2$  during the combustion process and subsequently converted to sulfate compounds in the atmosphere. Sulfate exposure can increase risks of respiratory disease (CARB 2009b).

In addition to criteria air pollutants, the U.S. EPA and CARB have classified certain pollutants as hazardous air pollutants (HAPs) or toxic air contaminants (TACs), respectively. These pollutants can cause severe health effects at very low concentrations, and many are suspected or confirmed carcinogens. The U.S. EPA has identified 187 HAPs, including such substances as benzene and formaldehyde; CARB also considers particulate emissions from diesel-fueled engines (DPM) and other substances to be TACs<sup>1</sup>.

- **DPM.** The exhaust from diesel engines is comprised of hundreds of different gaseous and particulate components, many of which are toxic. Many of the toxic compounds adhere to the particles, and because diesel particulates are very small (less than 2.5 microns in diameter), they can penetrate deeply into the lungs. Mobile sources using diesel fuel, including trucks, buses, automobiles, trains, ships, and farm equipment, are the largest source of DPM emissions in the Bay Area.

### 3.2.2 San Francisco Bay Area Air Basin

The U.S. EPA and CARB are the federal and state agencies charged with maintaining air quality in the nation and state, respectively. The U.S. EPA delegates much of its authority over air quality to CARB. CARB has geographically divided the state into 15 air basins for the purposes of managing air quality on a regional basis. An air basin is a CARB-designated management unit with similar meteorological and geographic conditions. The proposed project site is located in unincorporated San Mateo County, within the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB covers all of Alameda, Contra Costa, Marin, Napa, Santa Clara, San Mateo, and San Francisco counties, and portions of Solano and Sonoma counties. The project site is situated on the San Francisco Peninsula, approximately 0.5 miles east of the I-280 and approximately 20 miles southeast of San Francisco and 14 miles northwest of San Jose.

#### 3.2.2.1 SFBAAB Topography and Meteorology

The topography and meteorology of the SFBAAB are characterized by the coast mountain ranges and the seasonal migration of the Pacific high-pressure cell. Regionally, basin airflow is affected by the coast mountain ranges, which create complex terrains consisting of higher elevations, valleys, and bays. The Golden Gate to the west and the Carquinez Strait to the east create gaps in the mountain ranges that allow air to flow into and out of the SFBAAB. In the summer, winds from the northwest are channeled through the Golden Gate and other narrow openings, resulting in localized areas of high wind speeds. Air flowing from the coast inland is called the sea breeze and begins developing in the late morning or early afternoon; air flowing from the inland regions back to the coast, or drainage, occurs at night.

Basin climate is also influenced by the Pacific high-pressure cell, a semi-permanent area of high pressure located over the Pacific Ocean. In the summer, the cell is centered over the northeastern Pacific Ocean, pushing storms to the north and resulting in generally stable conditions within the

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<sup>1</sup> Since CARB's list of TACs references and includes U.S. EPA's list of HAPs, this EIR uses the term TAC when referring to HAPs and TACs.

Bay Area. In the winter, the cell weakens and migrates south, bringing cooler temperatures and stormy conditions.

The SFBAAB is most susceptible to air pollution during the summer when cool marine air flowing through the Golden Gate can become trapped under a layer of warmer air (known as an inversion) and prevented from escaping the valleys and bays created by the Coast Ranges. Air pollution potential is highest along the southeastern portion of the peninsula because this area is most protected from the high winds and fog of the marine layer, the emission density is relatively high, and pollutant transport from upwind sites is possible. Wintertime inversions are weaker and more localized and are the result of rapid heat radiation from the earth's surface.

### ***San Carlos Airport Wind Conditions***

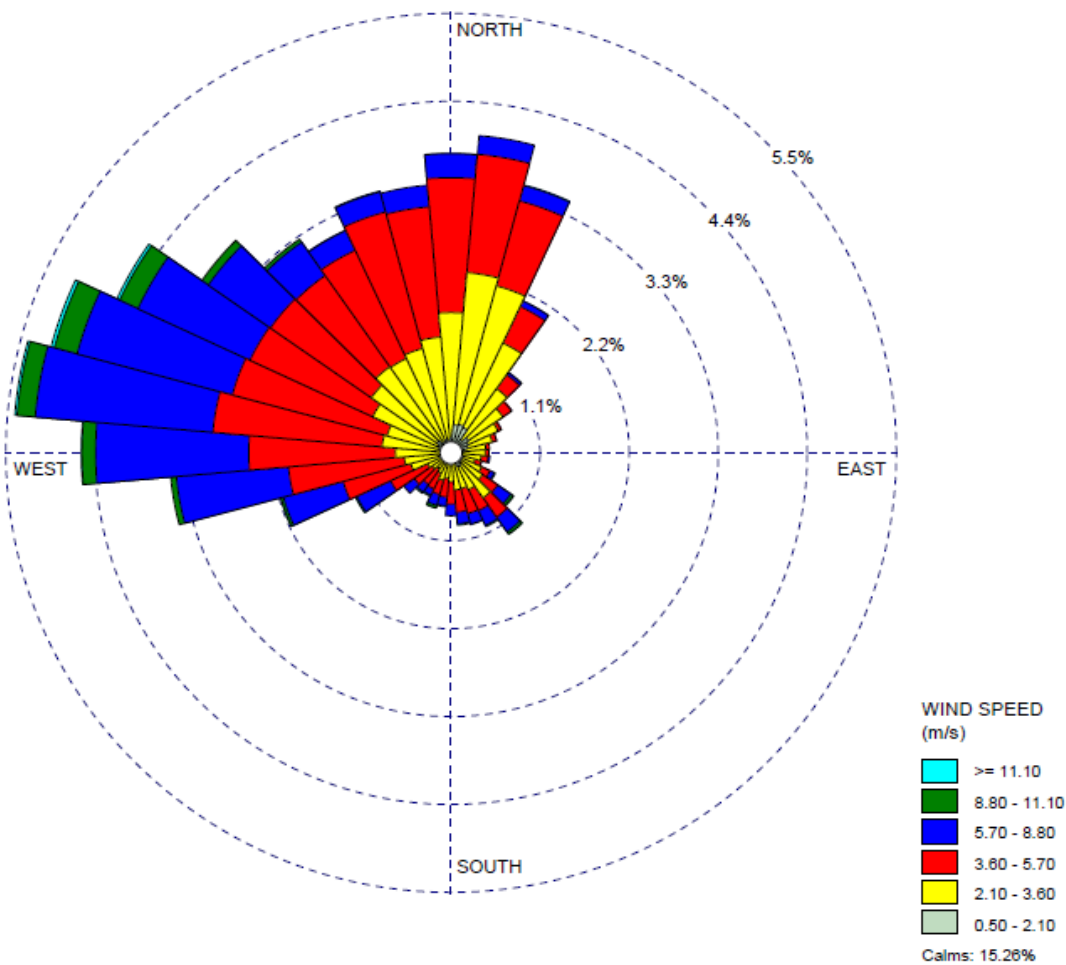
CARB provides pre-processed surface and upper air data from airports throughout California; the two nearest surface air datasets in relation to the project site are from San Francisco International Airport (SFO) and San Carlos Airport.<sup>2</sup> Although there are dissimilarities in topography and other surface parameters between a project site in the foothills and both airports for which pre-processed meteorological data is available, the San Carlos dataset is considered most representative of the project site due to its proximity to the site<sup>3</sup>.

The San Carlos Airport, located approximately 3.4 miles northwest of the project site, is the closest meteorological station for which CARB provides historic data. As shown in Figure 3-1, data from 2009 to 2014 (the most recent data CARB has released for this site) indicates the prevailing wind at the airport blows from the west/northwest to the east/southeast.

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<sup>2</sup> Oakland Airport is the closest upper air meteorological station with data available and would be representative of both the SFO and San Carlos sites.

<sup>3</sup> This determination is based on a consultation with the BAAQMD the County's EIR contractor (MIG, Inc.) had on a recent project located near Crystal Springs Road approximately 5 miles north of the CMHC in which the BAAQMD recommended the use of the San Carlos Airport site for foothill conditions even though SFO airport was located closer to the project site off of Crystal Springs Road.

**Figure 3-1 Prevailing Daytime Wind Pattern (San Carlos Airport)**

*Wind roses depicting prevailing daily wind patterns (6 AM to 6 PM) at San Carlos Airport for the years 2009 to 2014.*

### 3.2.2.2 SFBAAB Attainment Status and Emissions Summary

The federal and state governments have established emissions standards and limits for air pollutants that may reasonably be anticipated to endanger public health or welfare. These standards typically take one of two forms: standards or requirements that are applicable to specific types of facilities or equipment (e.g., petroleum refining, metal smelting), or concentration-based standards that are applicable to overall ambient air quality. Air quality conditions are best described and understood in the context of these standards; areas that meet, or attain, concentration-based ambient air quality standards are considered to have levels of pollutants in the ambient air that, based on the latest scientific knowledge, do not endanger public health or welfare.

- **Attainment.** A region is “in attainment” if monitoring shows ambient concentrations of a specific pollutant are less than or equal to the NAAQS or CAAQS. In addition, an area that has been re-designated from nonattainment to attainment is classified as a “maintenance area” for 10 years to ensure that the air quality improvements are sustained.
- **Nonattainment.** If the NAAQMD or CAAQS are exceeded for a pollutant, the region is designated as nonattainment for that pollutant. It is important to note that some NAAQS and CAAQS require multiple exceedances of the standard in order for a region to be classified as nonattainment. Federal and state laws require nonattainment areas to develop strategies, implementation plans, and control measures to reduce pollutant concentrations to levels that meet, or attain, standards.
- **Unclassified.** An area is unclassified if the ambient air quality monitoring data are incomplete and do not support a designation of attainment or nonattainment.

Table 3-2 below lists the NAAQS and CAAQS and summarizes the SFBAAB attainment status.

<b>Table 3-2 Ambient Air Quality Standards and SFBAAB Attainment Status</b>					
<b>Pollutant</b>	<b>Averaging Time</b>	<b>California AAQS <sup>(A)</sup></b>		<b>National AAQS <sup>(B)</sup></b>	
		<b>Standard <sup>(C)</sup></b>	<b>Attainment Status <sup>(D)</sup></b>	<b>Standard <sup>(C)</sup></b>	<b>Attainment Status <sup>(D)</sup></b>
Ozone	1-Hour	180 µg/m <sup>3</sup>	N	--	--
	8-Hour	137 µg/m <sup>3</sup>	N	137 µg/m <sup>3</sup>	N
PM10	24-Hour	50 µg/m <sup>3</sup>	N	150 µg/m <sup>3</sup>	U
	Annual Average	20 µg/m <sup>3</sup>	N	--	--
PM2.5	24-Hour	--	--	35 µg/m <sup>3</sup>	N <sup>(E)</sup>
	Annual Average	12 µg/m <sup>3</sup>	N	12 µg/m <sup>3</sup>	U/A <sup>(F)</sup>
Carbon Monoxide	1-Hour	23,000 µg/m <sup>3</sup>	A	40,000 µg/m <sup>3</sup>	A
	8-Hour	10,000 µg/m <sup>3</sup>	A	10,000 µg/m <sup>3</sup>	A
Nitrogen Dioxide	1-Hour	339 µg/m <sup>3</sup>	A	188 µg/m <sup>3</sup>	U <sup>(G)</sup>
	Annual Average	57 µg/m <sup>3</sup>	--	100 µg/m <sup>3</sup>	A
Sulfur Dioxide	1-Hour	655 µg/m <sup>3</sup>	A	196 µg/m <sup>3</sup>	U <sup>(H)</sup>
	24-Hour	105 µg/m <sup>3</sup>	A	--	--
Sulfates	24-Hour	25 µg/m <sup>3</sup>	A	--	--
Hydrogen Sulfide	1-Hour	42 µg/m <sup>3</sup>	U	--	--
Vinyl Chloride	24-Hour	26 µg/m <sup>3</sup>	--	--	--
Source: BAAQMD 2017b, modified by MIG.					
(A) Table does not list CAAQS for lead and visibility reducing particles. California standards for ozone, carbon monoxide, sulfur dioxide (1 and 24-hour), nitrogen dioxide, suspended PM10 and PM2.5 are values that are not to be exceeded. The standards for sulfates, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded.					

Table 3-2 Ambient Air Quality Standards and SFBAAB Attainment Status					
Pollutant	Averaging Time	California AAQS <sup>(A)</sup>		National AAQS <sup>(B)</sup>	
		Standard <sup>(C)</sup>	Attainment Status <sup>(D)</sup>	Standard <sup>(C)</sup>	Attainment Status <sup>(D)</sup>
<p>(B) Standards shown are the primary NAAQS designed to protect public health.</p> <p>(C) All standards shown in terms of micrograms per cubic meter (µg/m³) for comparison purposes.</p> <p>(D) A= Attainment, N= Nonattainment, U=Unclassifiable.</p> <p>(E) On January 2013, the U.S. EPA issued a final rule to determine the Bay Area attains the 24-hour PM2.5 national standard. This EPA rule suspends key State Implementation Plan (SIP) requirements as long as monitoring data continue to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as “non-attainment” for the national 24-hour PM2.5 standard until such time as the Air District submits a “redesignation request” and a “maintenance plan” to EPA, and EPA approves the proposed redesignation.</p> <p>(F) In December 2012, EPA strengthened the annual PM 2.5 NAAQS from 15.0 to 12.0 micrograms per cubic meter (ug/m3). In December 2014, EPA issued final area designation for the 2012 primary annual PM 2.5 NAAQS. Areas designated “unclassifiable/attainment” must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.</p> <p>(G) To attain this standard, the 3-year average of the 98<sup>th</sup> percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100ppm (effective January 22, 2010). The US Environmental Protection Agency (EPA) expects to make a designation for the Bay Area by the end of 2017.</p> <p>(H) On June 2, 2010, the US EPA established a new 1-hour SO2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99<sup>th</sup> percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO2 NAAQS however must continue to be used until one year following US EPA initial designations of the new 1-hour SO2 NAAQS. EPA expects to make this designation for the Bay Area by the end of 2017.</p>					

### 3.2.3 Existing Emissions

The existing CMHC consists of a three-story building with 117 beds and approximately 89 full-time equivalent employees. The existing building generates emissions from the following sources:

- **Small “area” sources.** The existing CMHC facility generates emissions from small area sources including landscaping equipment and the use of consumer products such as paints, cleaners, and fertilizers that result in the evaporation of chemicals to the atmosphere during product use.
- **Energy use and consumption.** The existing CMHC facility generates emissions from the combustion of natural gas in building water and space heating equipment.
- **Mobile sources.** The existing CMHC facility generates emissions from employee, vendor, and visitor vehicles travelling to and from the project site.

The emissions generated by the existing CMHC facility were estimated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. The existing emissions were estimated using default data assumptions contained within CalEEMod and are shown in Table 3-3 below. Please refer to Appendix C for detailed emissions estimates information and CalEEMod output files.



**Table 3-3 CMHC Facility Existing Emissions Estimates**

Emissions Source	Pollutant Emissions (Tons per Year)						
	ROG	NO <sub>x</sub>	CO	PM <sub>10</sub>		PM <sub>2.5</sub>	
				Dust	Exhaust	Dust	Exhaust
Area	0.7	0.02	1.2	--	0.1	--	0.1
Energy	<0.0	0.05	0.02	--	<0.00	--	<0.00
Mobile	0.1	0.3	1.0	0.3	<0.00	0.1	<0.00
<b>Total<sup>(A)</sup></b>	<b>0.7</b>	<b>0.3</b>	<b>2.2</b>	<b>0.3</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
Sources: MIG 2019, see Appendix C.							
(A) Totals may not equal due to rounding							

### 3.2.4 Air Quality Sensitive Receptors

Some people are more affected by air pollution than others. The BAAQMD defines sensitive receptors as “facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses” (BAAQMD 2017c). In general, children, senior citizens, and individuals with pre-existing health issues, such as asthmatics, are considered sensitive receptors. Both CARB and the BAAQMD consider schools, schoolyards, parks and playgrounds, daycare facilities, nursing homes, hospitals, and residential areas as sensitive air quality land uses and receptors (BAAQMD 2017d, CARB 2005).

The land surrounding the project is generally undeveloped; Pulgas Ridge Open Space Preserve borders the site to the north, east, and west. Edgewood Road and Edgewood Park and Natural Preserve border the site to the south. The project site is shared with the San Mateo County Fire Station 18 and the Canyon Oaks Youth Center.

Both the CMHC and the Canyon Oaks Youth Center provide mental health services. The average length of patient stay at the 68-bed MHRC varies; some patients leave within six months, and some remain for more than one year. In addition, the unlocked Co-Housing is permanent housing in which patients may stay for many years, although most do not. The average length of stay for patients discharged from the Co-Housing is five months.

The Canyon Oaks Youth Center is a co-ed residential treatment program serving San Mateo County youth ages 12–17. The primary goal of the center is to provide a therapeutic environment that helps youth regain mental and emotional stability and ultimately return to his or her community within the shortest possible time.

## 3.3 PROJECT IMPACTS

The methodologies and assumptions used in preparation of this section follow the CEQA Guidelines developed by the BAAQMD, as revised in May 2017 (BAAQMD 2017c). Information on existing air quality conditions, federal and state ambient air quality standards, and pollutants of concern was obtained from the U.S. EPA, CARB, and BAAQMD. This EIR air quality analysis has been closely coordinated with the climate change analysis in Chapter 5 of this EIR.

### 3.3.1 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines and the San Mateo County Initial Study Environmental Evaluation Checklist, the proposed project would have a significant air quality impact if it would:

- (a) Conflict with or obstruct implementation of the applicable air quality plan;
- (b) Result in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment under an applicable federal or state ambient air quality standard;
- (c) Expose sensitive receptors to substantial pollutant concentrations, as defined by the BAAQMD;
- (d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

#### ***BAAQMD Significance Thresholds***

In May 2017, the BAAQMD published a new version of the *CEQA Air Quality Guidelines*, which includes revisions made to address the Supreme Court's decision on the *California Building Industry Association v. BAAQMD*. The Guidelines contain the BAAQMD's recommendations to Lead Agencies for evaluating and assessing the significance of a project's potential air quality impacts (BAAQMD 2017c). The BAAQMD's construction- and operational-related thresholds of significance for criteria pollutants and toxic air contaminants are summarized in Table 3-4.

Table 3-4 BAAQMD CEQA Thresholds of Significance			
Pollutant	BAAQMD Project-Level Threshold of Significance <sup>(A)</sup>		
	Construction Emissions	Operational Emissions	
	Daily Emissions (lb/day)	Daily Emissions (lb/day)	Annual Emissions (tons per year)
ROG	54	54	10
NO <sub>x</sub>	54	54	10
Exhaust PM10	82	82	15
Exhaust PM2.5	54	54	10
Fugitive Dust PM10/PM2.5	BMPs	None	
Local CO	None	9.0 ppm (8-hr. avg.) 20.0 ppm (1-hr. avg.)	
Risks and Hazards – New Source/Receptor (Individual)	Compliance with Qualified Community Risk Reduction Plan; or Increased cancer risk of >10.0 in a million; and Increased non-cancer risk of >1.0 Hazard Index (chronic or acute); and Ambient PM2.5 increase: >0.3µg/m <sup>3</sup> annual average		
Risks and Hazards – New Source/Receptor (Cumulative)	Compliance with Qualified Community Risk Reduction Plan; or Increased cancer risk of >100 in a million (from all local sources); and Increased non-cancer risk of >10.0 Hazard Index (from all local sources) (chronic); and Ambient PM2.5 increase: >0.8µg/m <sup>3</sup> annual average (from all local sources)		

**Table 3-4 BAAQMD CEQA Thresholds of Significance**

Pollutant	BAAQMD Project-Level Threshold of Significance <sup>(A)</sup>		
	Construction Emissions	Operational Emissions	
	Daily Emissions (lb/day)	Daily Emissions (lb/day)	Annual Emissions (tons per year)
Accidental Release of Acutely Hazardous Pollutants	None	Storage or use of acutely hazardous materials locating near receptors or receptors locating near stored or used acutely hazardous materials considered significant	
Odors	None	Complaint History – 5 confirmed complaints per year averaged over three years	
Source: BAAQMD 2017c.			

### 3.3.2 Applicable Air Quality Plans

As described below, the proposed Cordilleras Health System Replacement Project would not conflict with or obstruct implementation of the BAAQMD 2017 Clean Air Plan. The BAAQMD's 2017 Clean Air Plan is a multi-pollutant plan focused on protecting public health and the climate. Specifically, the primary goals of the 2017 Clean Air Plan are to:

- Attain all state and national quality standards;
- Eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants; and
- Reduce Bay Area GHG Emissions to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050<sup>4</sup>.

The Cordilleras Health System Replacement Project would not involve land use changes that would lead to significant development, population, growth, or new, permanent sources of emissions. The project would increase the capacity of the CMHC from 117 to 121 beds while staffing levels would increase from 89 to 107 full-time equivalents. The project primarily involves construction activities that would cease to emit emissions once project construction is complete.

Chapter 5 of the 2017 Clean Air Plan contains the BAAQMD's strategy for achieving the plan's climate and air quality goals. This control strategy is the backbone of the 2017 Clean Air Plan. It identifies 85 distinct control measures designed to:

- Reduce ozone precursors, in order to fulfill California Health & Safety Code ozone planning requirements;
- Protect public health by reducing emissions of ozone precursors, PM, and TACs; and
- Serve as a regional climate protection strategy by reducing emissions of GHG across the full range of economic sectors.

<sup>4</sup> Impacts related to GHG emissions and consistency with the CAP is discussed in Chapter 5 of this document.

The 85 control strategies identified in the 2017 Clean Air Plan are grouped by nine economic-based “sectors” as shown in Table 3-5.<sup>5</sup>

<b>Table 3-5 BAAQMD 2017 Clean Air Plan Control Measure Sectors</b>		
<b>Sector</b>	<b>No. of Measures</b>	<b>General Description of Sector Applicability</b>
Agriculture (AG)	4	Applies to sources of air pollution from agricultural operations include on and off-road trucks and farming equipment, aircraft for crop spraying, animal waste, pesticide and fertilizer use, crop residue burning, travel on unpaved roads, and soil tillage.
Buildings (BL)	4	Applies to residential, commercial, governmental and institutional buildings, which generate emissions through energy use for heating, cooling, and operating the building, and from the materials used in building construction and maintenance
Energy (EN)	2	Applies to emissions of criteria pollutants, TACs, and GHGs from electricity generated and used within the Bay area, as well as GHG emissions from electricity generated outside the Bay area that is imported and used within the region
Natural and Working Lands (NW)	3	Applies to emissions from natural and working lands, including forests, woodlands, shrub lands, grasslands, rangelands, and wetlands.
Stationary Sources (SS)	40	Applies to stationary sources generally used in commercial and industrial facilities. Such sources are typically regulated through BAAQMD rulemaking, permitting, and enforcement programs
Super GHGs (SL)	3	Applies to emissions of methane, black carbon, and fluorinated gases
Transportation (TR)	23	Applies to on-road motor vehicles such as light-duty automobiles or heavy-duty trucks, as well as off-road vehicles, including airplanes, locomotives, ships and boats, and off-road equipment such as airport ground-support equipment, construction equipment and farm equipment.
Waste (WA)	4	Applies to emissions from landfills and composting activities.
Water (WR)	2	Applies to direct emissions from the treatment of water and wastewater at publicly owned treatment works and indirect emissions associated with the energy used to pump, convey, recycle, and treat water and wastewater throughout the Bay
Source: BAAQMD 2017a.		

Of the nine economic sectors, only four contain control measures that are relevant to the project’s potential construction and operational activities. As described below, the project would be consistent with the 2017 Clean Air Plan control measures and implementation mechanisms.

**Buildings.** Building control measure 1 (BL1; Green Buildings) reduces GHG and TAC emissions associated with building operations. This 2017 Clean Air Plan control measure would be implemented via the BAAQMD’s financial incentive programs, inter-agency coordination,

<sup>5</sup> The BAAQMD 2017 Clean Air Plan use the same economic sectors contained in CARB’s Scoping Plan.

and technical planning assistance services. The proposed CMHC replacement facility would be, at a minimum, LEED certified. The County is targeting a high-performance design and strives to achieve a zero-net carbon development. The proposed development would include on-site renewable sources such as photovoltaic (PV) system (i.e., solar panels) on roof tops and/or landscaped area. The project would, therefore, be consistent with this control measure.

**Stationary Sources.** Stationary source control measure 32 (SS32; Emergency Backup Generators) reduces DPM from backup generators. This 2017 Clean Air Plan control measure would be implemented via the BAAQMD's rulemaking and permitting authority. In November 2017, the BAAQMD adopted Regulation XI, Rule 18, Reduction of Risk from Air Toxic Emissions at Existing Facilities, pursuant to SS32. Although specific details are not known at this time, the County intends to install a diesel-fueled, emergency backup generator for the CMHC replacement facility (either reuse of the existing generator or a new generator). The County would comply with all BAAQMD rules and regulations governing emissions from existing or new diesel-fueled backup generators.

Stationary source control measure 36 (SS36; PM from Trackout) reduces PM<sub>2.5</sub> emissions from track-out of mud and dirt onto paved, public roadways and SS38 (Fugitive Dust) reduces fugitive dust emissions from sources including construction activities. These 2017 Clean Air Plan measures would be implemented via the BAAQMD's rulemaking and permitting authority. In August 2018, the BAAQMD adopted Regulation VI, Rule 6, Prohibition of Trackout, pursuant to SS36. As described under Impact AQ-2 below, the District would comply with BAAQMD's trackout prevention requirements and has incorporated Best Management Practices (BMPs) into the project to control and abate fugitive dust emissions that are consistent with BAAQMD recommendations contained in the BAAQMD CEQA Air Quality Guidelines.

**Transportation.** Several transportation (TR) control measures generally reduce emissions from cars, trucks, and equipment operations, including TR14 (Cas and Light Trucks), TR19 (Medium- and Heavy-Duty Trucks), and TR22 (Construction, Freight, and Farming Equipment). These 2017 Clean Air Plan measures would be implemented via the BAAQMD's financial incentive programs, inter-agency coordination, and technical planning assistance services. The proposed project would comply with control measure TR2 that requires employers with 50 or more Bay Area employees to provide commuter benefits. The control measure encourages local governments, on top of other things, to develop innovative ways to encourage rideshare, transit, cycling, and walking for work trips. The County is committed to the implementation of TDM measures that encourage employees to carpool, take transit, or use active modes of transportation rather than driving individual vehicles to the CMHC.

**Waste.** Waste control measure 4 (WA4; Recycling and Waste Reduction) reduces emissions from landfills by diverting recyclables and other materials from landfills. This 2017 Clean Air Plan measure would be implemented via BAAQMD information dissemination services, such as recommended best practices and development of model ordinances. The proposed project would comply with San Mateo County Code of Ordinances, Section 4.105.030 that would requires the project divert one hundred percent (100%) of inert solids, and at least fifty percent (50%) of the remaining construction and demolition debris tonnage.

As described above, the project would be consistent with all relevant and potentially applicable 2017 Clean Air Plan Control Measures. The project would not disrupt, delay, or otherwise hinder any BAAQMD rulemaking processes, and individual activities would comply with all applicable BAAQMD rules and regulations in effect at the time individual activities move forward. The

project also would not disrupt, delay, or otherwise hinder with any grant or information-sharing programs operated by the BAAQMD other regional agencies through which many of the 2017 Clean Air Plan's Transportation Sector control measures are implemented. Furthermore, as described in EIR section 3.3.3 below, the project's emissions are estimated to be below all BAAQMD quantitative thresholds for criteria air pollutants. As a result, the project would not conflict or obstruct implementation of air quality plans and the impact would be *less than significant*.

### 3.3.3 Air Quality Standards or Air Quality Violations

The proposed project would generate short-term construction and long-term operational emissions of regulated air pollutants (i.e., criteria air pollutants and TACs). These emissions would be released to the ambient air and disperse according to the topographic and meteorological influences that prevail near the project site and in the greater SFBAAB (see EIR section 3.2.2.1). The BAAQMD and/or CARB monitor levels of criteria air pollutant concentrations in ambient air to evaluate attainment of CAAQS and NAAQS; the significance of the level of criteria air pollutant emissions the proposed project could emit during construction and operation is evaluated below.<sup>6</sup>

Neither the BAAQMD nor CARB conduct regular and routine monitoring of TACs because most TACs do not have an established ambient air quality standard against which ambient air concentrations can be compared<sup>7</sup>; however, TAC emissions could result in local effects if substantial concentrations were to occur at sensitive receptor locations as a result of the proposed project. The proposed project's TAC emissions are discussed in EIR section 3.3.5.

#### 3.3.3.1 Construction Emissions

Construction activities associated with the proposed project would generally include demolition of the existing CMHC building, site preparation, earthwork and grading, foundation construction, building construction, and paving, architectural coating activities. These types of construction activities would generate emissions from the following sources:

**Exhaust Emissions.** Gasoline- and diesel-fuel combustion in on- and off-site, heavy-duty construction equipment, worker vehicle trips, vendor vehicle trips, and haul truck trips generates emissions of ROG, NO<sub>x</sub>, CO, exhaust PM, and other pollutants. The age, type, amount, size, and activity hours of construction equipment use, as well as the associated number of workers, vendors, and haul trucks needed to construct a project, all influence the amount of exhaust emissions produced during construction.

**Fugitive Dust and PM Emissions.** On- and off-site vehicle travel on paved and unpaved roads used to access the job site generates fugitive dust and PM emissions. The silt content, moisture level, vehicle weight, and vehicle speed are factors that affect fugitive dust emissions from vehicle travel on paved and unpaved roads. Demolition and ground disturbance activities associated with material crushing, grading, excavation, and other soil-disturbing activities also generate fugitive dust and PM emissions. Emissions that occur as a result of these activities not only occur during the active earth disturbance/concrete crushing process, but also while the

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<sup>6</sup> Criteria air pollutant emissions generated during construction and operation of the proposed Project would contribute to ambient criteria air pollutant concentrations – and the attainment status of these pollutants – within the SFBAAB.

<sup>7</sup> Ambient air quality standards have been adopted for lead and vinyl chloride, both of which are TACs; however, these pollutants are monitored at far fewer locations than criteria air pollutants like ozone precursor and PM.

materials are being deposited into haul trucks and transported it to their final destinations. Similar to vehicle travel on unpaved roads, the soil moisture, wind speed, and volume of material moved affect potential fugitive dust emissions from earth moving activities.

The project's potential construction emissions were modeled using CalEEMod, V. 2016.3.2 (see Appendix C). Construction activities are anticipated to begin in March 2020 and conclude in November 2022. Construction phase and duration information was provided by the County and is summarized in Table 3-6; the type and amount of equipment used during construction was generated using CalEEMod default assumptions and modified as necessary to reflect specific construction activities, including the import of up to 9,400 cubic yards of fill material for site balancing purposes.

<b>Table 3-6 Project Construction Phases, Duration, and Typical Equipment Used</b>		
<b>Phase</b>	<b>Approximate Duration (Days)</b>	<b>Typical Equipment Used</b>
Demolition	65	Concrete/industrial saws, excavator, rubber tire dozer
Site Preparation	87	Rubber tire dozer, tractor, backhoe
Grading	132	Excavator, bulldozer, backhoe, grader, trencher
Building Construction (Foundation)	174	Bore/drill rig, excavator, backhoe, concrete trucks
Building Construction (Vertical Building Construction)	411	Crane, material handling equipment, concrete trucks
Building Construction (Interior)	152	Material handling equipment
Paving	18	Cement mixer, paver, roller
Architectural Coating	12	Compressor
Site Finishing (Demobilization)	109	Tractor, backhoe, material handling equipment
Source: Skanska 2019		

The proposed project's average daily construction emissions, as estimated using CalEEMod, are shown in Table 3-7.

**Table 3-7 Estimated Project Construction Emissions (Unmitigated)**

Construction Year	Pollutant Emissions (Average Pounds per Day) <sup>(A)</sup>						
	ROG	NO <sub>x</sub>	CO	PM <sub>10</sub>		PM <sub>2.5</sub>	
				Dust	Exhaust	Dust	Exhaust
2020	2.2	39.9	49.3	6.5	1.9	3.2	1.9
2021	21.6	19.3	24.7	1.6	0.9	0.4	0.9
2022	0.5	8.1	11.1	0.5	0.4	0.1	0.4
<b>BAAQMD CEQA Threshold</b>	<b>54</b>	<b>54</b>	<b>--</b>	<b>BMPs<sup>(B)</sup></b>	<b>82</b>	<b>BMPs<sup>(B)</sup></b>	<b>82</b>
Potential Significant Impact?	No	No	No	No	No	No	No
Sources: BAAQMD 2017c; MIG 2019 (see Appendix C).							
(A) Average daily emissions assume 239 active construction days in 2020, 261 days in 2021, and 238 days in 2022.							
(B) For all projects, the BAAQMD recommends implementing eight basic construction BMPs to control fugitive dust from construction activities.							

As shown in Table 3-7, potential construction emissions would be below all BAAQMD significance thresholds for construction equipment exhaust emissions; however, fugitive dust emissions could be potentially significant if not adequately controlled. The BAAQMD's *CEQA Guidelines* identify and recommend a series of "Basic" measures to control and reduction construction-related emissions. For all projects, the BAAQMD recommends implementation of eight Basic Construction Measures (BAAQMD 2017c, pg. 8-4) to reduce construction fugitive dust emissions levels; these basic measures are also used to meet the BAAQMD's best management practices (BMPs) threshold of significance for construction fugitive dust emissions (i.e., the implementation of all basic construction measures renders fugitive dust impacts a less than significant impact). As described in EIR section 2.6 of the Project Description, the County incorporates BMPs into the planning, design, construction, operation and maintenance of its projects to minimize the potential adverse effects of the project on the surrounding community and the environment. The BMPs identified in Table 2-4 include the BAAQMD's recommended basic construction measures to control and reduce fugitive dust in accordance with the BAAQMD CEQA Guidelines. With the incorporation of these measures, the proposed project's construction emissions would not cause or contribute to an existing or projected air quality violation and would be *less than significant*.

### 3.3.3.2 Operational Emissions

Once construction is completed in 2022, the proposed project would generate long-term emissions of criteria air pollutants from the following emissions sources:

- **Small "area" sources.** The Cordilleras Health System Replacement Project would generate emissions from small area sources including landscaping equipment and the use of consumer products such as paints, cleaners, and fertilizers that result in the evaporation of chemicals to the atmosphere during product use.
- **Energy use and consumption.** The proposed Project would generate emissions from electricity use and the combustion of natural gas in the facility's water and space heating equipment. The Project is targeting Zero Net Energy; however, the specific means for



achieving this target are not yet settled. Nonetheless, to account for the proposed project's sustainable design features such as on-site rooftop photovoltaic arrays and fuel cell energy production systems (see EIR section 2.4.2.1), the CalEEMod default electricity and natural gas energy intensity values were reduced by half.

- **Mobile sources.** The proposed project would generate emissions from vehicles travelling to and from the project site. As estimated using CalEEMod, the Project would result in 3,483,944 annual vehicle miles traveled.
- **Stationary sources.** The proposed project would generate emissions from one, diesel-fueled back-up generator. Although this source would be regularly tested (approximately one-hour per month for testing and maintenance purposes), it would not be part of routine, regular operations. Its operation would be subject to compliance with BAAQMD permit requirements and CARB's ATCM for Stationary Compression Ignition Engines (see EIR section 3.1.5). Testing emissions resulting from the back-up generator would not appreciably change the project's emissions estimates presented below.

The emissions resulting from operation of the proposed project are shown in Table 3-8.

<b>Table 3-8 Estimated Project Operational Emissions</b>							
<b>Source</b>	<b>Pollutant Emissions (Tons per Year)</b>						
	<b>ROG</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>PM<sub>10</sub></b>		<b>PM<sub>2.5</sub></b>	
				<b>Dust</b>	<b>Exhaust</b>	<b>Dust</b>	<b>Exhaust</b>
Area	0.4	0.0	0.9	--	<0.0	--	<0.0
Energy	<0.0	0.02	0.01	--	<0.0	--	<0.0
Mobile	0.1	0.2	0.8	0.3	<0.0	0.1	<0.0
Stationary	<0.0	<0.0	<0.0	<0.0	<0.0	<0.0	<0.0
Total	0.4	0.2	1.7	0.3	<0.0	0.1	<0.0
<b>Existing Emissions</b>	<b>0.7</b>	<b>0.3</b>	<b>2.2</b>	<b>0.3</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
Net Emissions	-0.3	-0.1	-0.5	0.0	-.0.1	0.0	-0.1
<b>BAAQMD CEQA Threshold</b>	<b>10</b>	<b>10</b>	<b>--<sup>(A)</sup></b>	<b>None</b>	<b>82</b>	<b>None</b>	<b>82</b>
Potentially Significant Impact?	No	No	No	No	No	No	No
Sources: BAAQMD 2017c; MIG 2019 (see Appendix C).							
(A) BAAQMD CO significant thresholds are based on ambient air quality standards (See Table 3-2). According to the BAAQMD screening criteria, a project does not result in significant CO impacts if it would be consistent with the CMP and not increase traffic volumes to 44,000 vehicles per hour at impacted intersections. The project would be consistent with the screening criteria and would not result in a significant CO impact.							

As shown in Table 3-8, the proposed project's potential long-term change in criteria air pollutant emissions would be substantially below all BAAQMD significance thresholds for operation. As such, the project's operational emissions would not cause or contribute to an existing or projected air quality violation and would be *less than significant*.

### 3.3.4 Cumulatively Considerable Criteria Pollutants

Cumulative air quality impacts are addressed below in EIR section 3.4.

### 3.3.5 Sensitive Receptors

Project-related construction activities would emit PM<sub>2.5</sub> and PM<sub>10</sub> from equipment and vehicle exhaust in close proximity to CMHC and Canyon Oaks Youth Center facilities, which house mental health patients that are considered sensitive air quality receptors. Although project construction would emit criteria and hazardous air pollutants, these emissions would not result in substantial pollutant concentrations that could generate substantial adverse health risks to on-site receptors for several reasons.

First, as shown in Table 3-7, the proposed project's construction emissions would be below all BAAQMD construction emission thresholds. In addition, the County's construction contractor, Skanska, has provided information that indicates the construction equipment fleet that would be used to construct the project would have fleet average NO<sub>x</sub> and PM emission factors that approximately meet Tier 3 emissions standards (Skanska 2019). The use of this equipment would reduce DPM emissions by a minimum of 24% below default equipment assumptions. Furthermore, as required by the BAAQMD, the County has incorporated BMPs into the project that would limit diesel construction equipment idling to no more than five minutes. Thus, the proposed project would not emit a substantial amount of DPM emissions.

Second, project construction activities and associated DPM emissions would occur intermittently during the daytime weekday period. i.e., they would not be a continuous source of emissions. The intermittent nature of project construction activities would provide time for emitted pollutants to disperse on an hourly and daily basis according to the local wind patterns which, as shown as Figure 3-1, are from the west/northwest. This means that emissions generated from the operation of construction equipment at the project site would disperse to the east/southeast, away from the existing Canyon Oaks Youth Center and existing CMHC.<sup>8</sup>

Third, on-site receptors would not be subjected to prolonged exposure to intermittent construction emissions. Although construction activities would occur from 2020 to 2022, patients at the existing CMHC and Canyon Oaks Youth Center stay at these facilities for approximately 6 to 18 months, with the goal of both programs being to return patients to emotional stability, and to their communities, within the shortest possible time. This means that patients would be exposed to construction emissions for a duration that is substantially less than the 70-year lifetime exposure duration used by the Office of Environmental Health Hazard Assessment to estimate adverse health risks from air pollutants (OEHHA 2015).

Finally, the patients at the existing CMHC and Canyon Oaks Youth Center would generally be considered adult receptors with low breathing rates and low or no age sensitivity safety factors pursuant to the OEHHA methodology. Patients would be provided access to outdoor facilities and recreation time, where pollutant concentrations would be highest, on a limited basis. The majority of the time patients spend on-site would be within the existing facilities, where pollutant concentrations from construction equipment emissions would be lower. These limiting factors would reduce the potential dosage and overall risk that on-site receptors could be subjected to from DPM emissions.

For these reasons, project construction DPM emissions are not expected to result in substantial pollutant concentrations that could result in adverse health risks; however, a key assumption in this conclusion is the project's use of construction equipment that, on a fleet-average basis, meets

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<sup>8</sup> As shown in Figure 3-1, the San Carlos Airport experienced calm wind conditions (generally less than two miles per hour) approximately 15% of the time during daytime hours, or approximately 2 out of every 12 hours, indicating pollutants would regularly disperse from the project site.

Tier 3 emission standards. To ensure this occurs, the County has incorporated Mitigation Measure AIR-1 into the project, which requires the use of construction equipment with a rated power rating of 50 horsepower or more to meet Tier 3 emissions standards. Thus, the proposed project would not expose sensitive receptors to substantial pollutant concentrations. This impact would be *less than significant with mitigation incorporated*.

### 3.3.6 Other Emissions such as those Leading to Odors

The proposed project's construction activities could generate odors from the following sources and activities:

- Evaporation of gasoline, oil, and other equipment fluids that can escape from pumps, hoses, and tanks in equipment or at construction staging and work areas.
- Evaporation of volatile compounds from paints and coatings when applied to surfaces.
- Off-gassing of volatile compounds from concrete and asphalt surfaces.
- Exhaust emissions from equipment and vehicle exhaust pipes.
- Fugitive emissions from earth moving and disturbance activities

Odors generated by short-term intermittent construction may or may not, depending on the particular individual's olfactory sensitivity, be perceived as objectionable, offensive, a nuisance, etc. While the proposed construction activities may involve more odor generating sources than typical operations, in general, construction activities would not result in the release of atypical odors or odors associated with industrial processes (e.g., coffee roasting).

Although construction-related odors may be detectable at the CMHC and the adjacent San Mateo County Fire Station 18 and Canyon Oaks Youth Center, this impact would not be significant. Construction activities would not result in the continuous generation of odors; rather, odors would be intermittent and only generated during certain activities (e.g., paving, equipment operations, painting and use of solvents) and times of day. Additionally, the project site is not surrounded by a substantial number of off-site sensitive receptors.

The proposed project would result in the continued operation of a mental health facility and would not substantially change the existing environment as it pertains to odors once construction is completed.

For the reasons outlined above, the project would not result in the creation of objectionable odors that would affect a substantial number of people. Therefore, this impact would be *less than significant*.

## 3.4 CUMULATIVE IMPACTS

The SFBAAB is an area of non-attainment for national and state ozone, state PM<sub>10</sub>, and national and state PM<sub>2.5</sub> air quality standards (see Table 3-2). Regarding cumulative impacts, the BAAQMD's CEQA Air Quality Guidelines state (BAAQMD 2017c, pg. 2-1):

“SFBAAB's non-attainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to

existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary."

As described in EIR sections 3.3.2 and 3.3.3, the proposed project does not conflict with the BAAQMD's 2017 Clean Air Plan and would not result in construction or operational emissions that exceed BAAQMD construction or operational screening criteria. Since the proposed project would not individually exceed any BAAQMD CEQA significance thresholds, the project's cumulative air quality impact would be *less than significant*.

### 3.5 MITIGATION MEASURES

**Impact AIR-1:** Project construction could generate emissions of diesel particulate matter (DPM) that could pose an adverse health risk to on-site receptors housed in the existing Cordilleras Mental Health Center and Canyon Oaks Youth Center.

**Mitigation Measure AIR-1:** To reduce potential adverse health risks associated with exposure to PM<sub>2.5</sub> emissions, including DPM emissions, generated during project construction activities, the County and/or its designated contractors, contractor's representatives, or other appropriate personnel shall apply the following construction equipment restrictions to the proposed project:

- Utilize on-site electrical hook-ups instead of diesel-powered equipment (e.g., diesel generators)) to the maximum extent feasible.
- All construction equipment with a rated power-output of 50 horsepower or greater shall meet U.S. EPA Tier III Emissions Standards.

**Effectiveness:** *These measures would reduce emissions DPM emissions by up to 24 percent and avoid the potential for adverse health risks from exposure to construction DPM emissions.*

**Implementation:** *The County shall incorporate this air quality mitigation measure into all appropriate engineering and site plan (e.g., building, grading, etc.) documents.*

**Timing:** *Prior to any demolition and/or ground-disturbing activities, unless otherwise specified.*

**Monitoring:** *The County shall review all engineering and site plan documents for inclusion of emissions control measures and contractor's evidence / verification that equipment complies with the control requirements.*

## **CHAPTER 4 BIOLOGICAL RESOURCES**

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### **4.1 REGULATORY SETTING**

#### **4.1.1 Federal Endangered Species Act**

The federal Endangered Species Act (FESA) of 1973, as amended, provides the regulatory framework for the protection of plant and animal species (and their associated critical habitats), which are formally listed, proposed for listing, or candidates for listing as endangered or threatened under the FESA. The FESA has the following four major components: (1) provisions for listing species, (2) requirements for consultation with the United States Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), (3) prohibitions against "taking" of listed species, and (4) provisions for permits that allow incidental "take". Specifically, Section 9 of the FESA prohibits the "taking" of a federally listed species. "Take" is defined by the FESA to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Both the USFWS and the NOAA Fisheries share the responsibility for administration of the FESA. Section 7 requires Federal agencies, in consultation with, and with the assistance of the USFWS or NOAA Fisheries, as appropriate, to insure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. The FESA also discusses recovery plans and the designation of critical habitat for listed species.

#### **4.1.2 Migratory Bird Treaty Act (MBTA)**

The federal Migratory Bird Treaty Act (MBTA) (16 U.S. Code [U.S.C.] 703 et seq.), Title 50 Code of Federal Regulations (CFR) Part 10, prohibits taking, killing, possessing, transporting, and importing of migratory birds, parts of migratory birds, and their eggs and nests, except when specifically authorized by the Department of the Interior. As used in the act, the term "take" is defined as meaning, "to pursue, hunt, capture, collect, kill or attempt to pursue, hunt, shoot, capture, collect or kill, unless the context otherwise requires." With a few exceptions, most birds are considered migratory under the MBTA. Disturbances that cause nest abandonment and/or loss of reproductive effort or loss of habitat upon which these birds depend would be in violation of the MBTA.

#### **4.1.3 Clean Water Act Sections 404 and 401**

The U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into waters of the U.S., including wetlands, under Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344). Waters of the U.S. are defined in Title 33 CFR Part 328.3(a) and include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds. The lateral limits of jurisdiction in those waters may be divided into three categories – territorial seas, tidal waters, and non-tidal waters – and is determined depending on which type of waters is present (Title 33 CFR Part 328.4(a), (b), (c)). Activities in waters of the U.S. regulated under Section 404 include fill for development, water resource projects (e.g., dams and levees), infrastructure developments (e.g., highways, rail lines, and airports) and mining projects. Section 404 of the CWA requires a federal permit before dredged or fill material may be discharged into waters of the U.S., unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities).

Section 401 of the CWA (33 U.S.C. 1341) requires an applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a water quality certification from the state in which the discharge originates. The discharge is required to comply with the applicable water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board and its nine Regional Water Quality Control Boards (RWQCB). The project site is under the jurisdiction of the San Francisco Bay RWQCB.

The San Francisco Bay RWQCB has adopted the USACE policy that there shall be "no net loss" of wetlands. Thus, prior to waiving or certifying water quality, the RWQCB requires a proposed project to ensure there are no impacts on existing wetlands, or, if such impacts are unavoidable, that they are fully mitigated.

#### **4.1.4 California Endangered Species Act (CESA)**

The State of California enacted similar laws to the FESA, including the California Native Plant Protection Act (NPPA) of 1977 (see EIR section 2.2.2) and the California Endangered Species Act (CESA) of 1984. The CESA expanded upon the original NPPA and enhanced legal protection for plants, but the NPPA remains part of the California Fish and Game Code. To align with the FESA, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the CESA as threatened species, it but did not do so for rare plants. Thus, these combined laws provide the legal framework for protection of California-listed rare, threatened, and endangered plant and animal species. The California Department of Fish and Wildlife (CDFW) implements NPPA and CESA, and its Wildlife and Habitat Data Analysis Branch maintains the California Natural Diversity Database (CNDDDB), a computerized inventory of information on the general location and status of California's rarest plants, animals, and natural communities. During the CEQA review process, the CDFW is given the opportunity to comment on the potential of the proposed project to affect listed plants and animals as a trustee agency.

#### **4.1.5 California Native Plant Protection Act**

The NPPA of 1977 (California Fish and Game Code, §§ 1900 through 1913) directed the CDFW to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by the CDFW, which has the authority to designate native plants as endangered or rare and to protect them from "take."

#### **4.1.6 Fully Protected Species and Species of Special Concern**

The classification of California fully protected species was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibian and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The Fish and Game Code sections (fish at §5515, amphibian and reptiles at §5050, birds at §3511, and mammals at §4700) dealing with California fully protected species states that these species "...may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species," (CDFW Fish and Game Commission 1998) although take may be authorized for necessary scientific research. This language makes the California fully protected species designation the strongest and most restrictive regarding the "take" of these species. In 2003, the code sections dealing with

California fully protected species were amended to allow the CDFW to authorize take resulting from recovery activities for state-listed species.

Species of special concern are broadly defined as animals not listed under the FESA or CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologist, and others, and is intended to focus attention on the species to help avert the need for costly listing under FESA and CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under CEQA.

#### **4.1.7 California Fish and Game Code Sections 3503, 3513 and 4150**

According to Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird (except English sparrow [*Passer domesticus*], rock pigeon [*Columba livia*], and European Starling [*Sturnus vulgaris*]). Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 essentially overlaps with the MBTA, prohibiting the take or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by the CDFW.

Pursuant to Fish and Game Code Section 4150, “[a]ll mammals occurring naturally in California which are not game mammals, fully protected mammals, or fur-bearing mammals, are nongame mammals. Nongame mammals or parts thereof may not be taken or possessed except as provided in this code or in accordance with regulations adopted by the commission.” This provision applies to bats which could be found in the project area.

#### **4.1.8 California Native Plant Society Inventory**

The California Native Plant Society (CNPS), a non-profit plant conservation organization, publishes and maintains an Inventory of Rare and Endangered Vascular Plants of California in both hard copy and electronic version ([www.rareplants.cnps.org](http://www.rareplants.cnps.org)).

The Inventory assigns plants to the following categories:

- 1A Presumed extinct in California;
- 1B Rare, threatened, or endangered in California and elsewhere;
- 2 Rare, threatened, or endangered in California, but more common elsewhere;
- 3 Plants for which more information is needed (i.e., a review list); and
- 4 Plants of limited distribution (i.e., a watch list).

Additional endangerment codes are assigned to each taxon as follows:

- 1 Seriously endangered in California (over 80% of occurrences threatened/high degree of immediacy of threat).
- 2 Fairly endangered in California (20-80% occurrences threatened).
- 3 Not very endangered in California (<20% of occurrences threatened or no current threats known).

Plants that are Rank 1A, 1B, and 2 of the CNPS Inventory consist of plants that may qualify for listing by the CDFW, as well as other state agencies (e.g., California Department of Forestry and

Fire Protection). As part of the CEQA process, such species should be fully considered, as they meet the definition of threatened or endangered under the NPPA and of the California Fish and Game Code (sections 2062 and 2067). California Rare Plant Rank (CRPR) 3 and 4 species are defined as plants about which more information is needed or are uncommon enough that their status should be regularly monitored. Such plants may be eligible or may become eligible for state listing, and CNPS and CDFW recommend that these species also be evaluated for consideration during the preparation of CEQA documents.

#### **4.1.9 Porter-Cologne Water Quality Control Act**

Waters of the State are defined by the Porter-Cologne Water Quality Control Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The State Water Resources Control Board protects all waters in its regulatory scope, but it has special responsibility for isolated wetlands and headwaters. These water bodies have high resource value, are vulnerable to filling, and may not be regulated by other programs, such as Section 404 of the CWA. Waters of the State are regulated by the RWQCBs under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in impacts to beneficial uses or a discharge of harmful substances to waters of the State, the RWQCBs have the option to regulate such activities under state authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements.

#### **4.1.10 California Fish and Game Code Section 1600-1603**

Streams, lakes, and riparian vegetation, as habitat for fish and other wildlife species, are subject to jurisdiction by the CDFW under Sections 1600-1616 of the California Fish and Game Code. Any activity that will: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake, generally requires a 1602 Lake and Streambed Alteration Agreement. The term “stream”, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life”. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFW 1994). Riparian is defined as “on, or pertaining to, the banks of a stream”; and riparian vegetation is defined as, “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFW 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from the CDFW.

#### **4.1.11 Sensitive Vegetation Communities**

Sensitive vegetation communities are natural communities and habitats that are either unique in constituent components, of relatively limited distribution in the region, or of particularly high wildlife value. These communities may or may not contain special-status species. Sensitive



natural communities are usually identified in local or regional plans, policies or regulations, or by the CDFW (i.e., CNDDDB) or the USFWS. The CNDDDB identifies a number of natural communities as rare, which are given the highest inventory priority. Impacts to sensitive natural communities and habitats must be considered and evaluated during CEQA review.

#### **4.1.12 California Code of Regulations and California Public Resources Code: Defensible Space**

The project is within the Wildland Urban Interface (WUI) and is required to comply with state laws governing wildfire risk. California Public Resources Code (PRC) Section 4291, and Title 14 of the California Code of Regulations (14 CCR § 1299.03) define and govern the maintenance of defensible space for structures located in the WUI, which requires the removal and subsequent management of vegetation within 100 feet of structures. Title 14 includes the following requirements which are consistent with the PRC.

Defensible space is required to be maintained at all times, whenever flammable vegetative conditions exist. One hundred feet (100 ft.) of defensible space clearance shall be maintained in two distinct “Zones” as follows: “Zone 1” extends thirty feet (30 ft.) out from each “Building or Structure,” or to the property line, whichever comes first; “Zone 2” extends from thirty feet (30 ft.) to one hundred feet (100 ft.) from each “Building or Structure,” but not beyond the property line. The vegetation treatment requirements for Zone 1 are more restrictive than for Zone 2, as provided in (a) and (b) below. The Department of Forestry and Fire Protection's “Property Inspection Guide, 2000 version, April 2000,” provides additional guidance on vegetation treatment within Zone 1 and Zone 2 but is not mandatory and is not intended as a substitute for these regulations.

##### **(a) Zone 1 Requirements:**

- (1) Remove all dead or dying grass, plants, shrubs, trees, branches, leaves, weeds, and pine needles from the Zone whether such vegetation occurs in yard areas around the “Building or Structure,” on the roof or rain gutters of the “Building or Structure,” or any other location within the Zone.
- (2) Remove dead tree or shrub branches that overhang roofs, below or adjacent to windows, or which are adjacent to wall surfaces, and keep all branches a minimum of ten feet (10 ft.) away from chimney and stovepipe outlets.
- (3) Relocate exposed firewood piles outside of Zone 1 unless they are completely covered in a fire-resistant material.
- (4) Remove flammable vegetation and items that could catch fire which are adjacent to or under combustible decks, balconies and stairs.

##### **(b) Zone 2 Requirements:**

- (1) In this zone create horizontal and vertical spacing among shrubs and trees using the “Fuel Separation” method, the “Continuous Tree Canopy” method or a combination of both to achieve defensible space clearance requirements. Further guidance regarding these methods is contained in the State Board of Forestry and Fire Protection's, “General Guidelines for Creating Defensible Space, February 8, 2006,” incorporated herein by reference, and the “Property Inspection Guide” referenced elsewhere in this regulation.
- (2) In both the Fuel Separation and Continuous Tree Canopy methods the following standards apply:

- (A) Dead and dying woody surface fuels and aerial fuels shall be removed. Loose surface litter, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches, shall be permitted to a maximum depth of three inches (3 in.).
- (B) Cut annual grasses and forbs down to a maximum height of four inches (4 in.).
- (C) All exposed wood piles must have a minimum of ten feet (10 ft.) of clearance, down to bare mineral soil, in all directions.

(c) For both Zones 1 and 2:

- (1) "Outbuildings" and Liquid Propane Gas (LPG) storage tanks shall have the following minimum clearance: ten feet (10 ft.) of clearance to bare mineral soil and no flammable vegetation for an additional ten feet (10 ft.) around their exterior.
- (2) Protect water quality. Do not clear vegetation to bare mineral soil and avoid the use of heavy equipment in and around streams and seasonal drainages. Vegetation removal can cause soil erosion, especially on steep slopes. Keep soil disturbance to a minimum on steep slopes.

Cal Fire will inspect defensible space, and provides the following guidance regarding planting and pruning in defensible space:

#### Horizontal Spacing

- Fire-resistant plants should be strategically planted to resist the spread of fire to a structure;
- On slopes of less than 20% the spacing between shrubs should be twice the height of the shrub and the distance between trees should be ten feet between the driplines;
- On slopes of 20-40% the spacing between shrubs increases to four times the height of the shrub, and the distance between trees increases to 20 feet between driplines;
- On slopes greater than 40% the distance between shrubs increases to six times the height of the shrub, and the distance between trees increases to 30 feet between driplines.

#### Vertical Spacing

- Remove branches beneath large trees for a 6-foot minimum clearance;
- Create proper vertical spacing between shrubs and the lowest branches of trees by maintaining a vertical distance between the top of the shrub within a dripline and the bottom branches of the trees of at least three times the height of the shrub (i.e., if the shrub is two feet tall there should be a 6 foot distance between it and the lowest branch of the tree above the shrub).

### 4.1.13 San Mateo County General Plan

The following policies to protect biological resources from the San Mateo County General Plan (San Mateo County 1986), General Plan Policies, Chapter 1. Vegetative, Water, Fish and Wildlife Resources Policies, are relevant to the proposed project:

- 1.1 *Conserve, Enhance, Protect, Maintain and Manage Vegetative, Water, Fish and Wildlife Resources:* Promote the conservation, enhancement, protection, maintenance and managed use of the County's Vegetative, Water, Fish and Wildlife Resources.
- 1.2 *Protect Sensitive Habitats:* Protect sensitive habitats from reduction in size or degradation of the conditions necessary for their maintenance.
- 1.5 *Definition of Vegetative Resources:* Define vegetative resources as plants and plant communities, including timber but excluding agricultural crops.

- 1.6 *Definition of Water Resources:* Define water resources as all surface water bodies, groundwater bodies and recharge areas, including perennial and intermittent streams.
- 1.7 *Definition of Fish and Wildlife Resources:* Define fish and wildlife resources as all non-domesticated animals.
- 1.8 *Definition of Sensitive Habitats:* Define a sensitive habitat as any area where the vegetative, water, fish and wildlife resources provide especially valuable and rare plant and animal habitats that can be easily disturbed or degraded. These areas include but are not limited to: (1) habitats containing or supporting rare or unique species; (2) riparian corridors; (3) marine and estuarine habitats; (4) wetlands; (5) sand dunes; (6) wildlife refuges, reserves, and scientific study areas; and (7) important nesting, feeding, breeding or spawning areas.
- 1.9 *Definition of Rare or Unique Species:* Define rare or unique species as any plant or animal that is determined to be rare, endangered, threatened, unique to the County and adjacent areas or protected by Federal or State law and State and County EIR guidelines.
- 1.10 *Definition of Riparian Corridors:* Define riparian corridors as the vegetative and wildlife areas adjacent to perennial and intermittent streams and other freshwater bodies, such as lakes, ponds, and reservoirs. Delineate these riparian corridors by the “limit of riparian vegetation,” i.e., a line determined by the existence of plant species normally found near streams, lakes, and other freshwater bodies.
- 1.14 *Definition of Buffer Zone:* Define Buffer Zones as those areas adjacent to sensitive habitats which are necessary to allow for periodic, seasonal, or ecological changes, including the impacts of climate change, which could affect the boundaries of sensitive habitats.
- 1.19 *Definition of Development:* Define development as the construction, reconstruction, conversion, relocation or enlargement of any structure; the division of a parcel of land into two or more parcels; any mining, excavation, landfill or land disturbance including grading; and changes in land uses.
- 1.20 *Designation of Sensitive Habitat:* Designate as sensitive habitats those areas which meet the definition of sensitive habitats. Recognize the Sensitive Habitats Map (dated December 1984) or subsequent updates or refinements as indicative of the distribution of sensitive habitats within San Mateo County, based upon the best and most current information available.
- 1.21 *Importance of Sensitive Habitats:* Consider areas designated as sensitive habitats as a priority resource requiring protection.
- 1.23 *Regulate Development to Protect Vegetative, Water, Fish and Wildlife Resources:*
  - a. Regulate land uses and development activities to prevent, and if infeasible mitigate to the extent possible, significant adverse impacts on vegetative, water, fish and wildlife resources.
  - b. Place a priority on the managed use and protection of vegetative, water, fish and wildlife resources in rural areas of the County.
- 1.24 *Regulate Location, Density and Design of Development to Protect Vegetative, Water, Fish and Wildlife Resources:* Regulate the location, density and design of development to

- minimize significant adverse impacts and encourage enhancement of vegetative, water, fish and wildlife resources.
- 1.25 *Protect Vegetative Resources:* Ensure that development will: (1) minimize the removal of vegetative resources and/or; (2) protect vegetation which enhances microclimate, stabilizes slopes or reduces surface water runoff, erosion or sedimentation; and/or (3) protect historic and scenic trees.
- 1.26 *Protect Water Resources:* Ensure that development will: (1) minimize the alteration of natural water bodies, (2) maintain adequate stream flows and water quality for vegetative, fish and wildlife habitats; (3) maintain and improve, if possible, the quality of groundwater basins and recharge areas; and (4) prevent to the greatest extent possible the depletion of groundwater resources.
- 1.27 *Protect Fish and Wildlife Resources:* Ensure that development will minimize the disruption of fish and wildlife and their habitats.
- 1.28: *Regulate Development to Protect Sensitive Habitats:* Regulate land uses and development activities within and adjacent to sensitive habitats in order to protect critical vegetative, water, fish and wildlife resources; protect rare, endangered, and unique plants and animals from reduction in their range or degradation of their environment; and protect and maintain the biological productivity of important plant and animal habitats.
- 1.29 *Establish Buffer Zones:*
- a. Establish necessary buffer zones adjacent to sensitive habitats which include areas that directly affect the natural conditions in the habitats and areas expected to experience changing vulnerabilities due to impacts of climate change.
  - b. As part of Countywide efforts to foster resilience and adapt to impacts of climate changes, establish wildlife corridors in appropriate locations to maintain a functional network of connected wildlands, to support native biodiversity, and to encourage movement of wildlife species.
- 1.30 *Uses Permitted in Sensitive Habitats:* Within sensitive habitats, permit only those land uses and development activities that are compatible with the protection of sensitive habitats, such as fish and wildlife management activities, nature education and research, trails and scenic overlooks and, at a minimum level, necessary public service and private infrastructure.
- 1.31 *Uses Permitted in Buffer Zones:* Within buffer zones adjacent to sensitive habitats, permit the following land uses and development activities: (1) land uses and activities which are compatible with the protection of sensitive habitats, such as fish and wildlife management activities, nature education and research, trails and scenic overlooks, and at a minimum level, necessary public and private infrastructure; (2) land uses which are compatible with the surrounding land uses and will mitigate their impact by enhancing or replacing sensitive habitats; and (3) if no feasible alternative exists, land uses which are compatible with the surrounding land uses.
- 1.32 *Regulate the Location, Siting and Design of Development in Sensitive Habitats:* Regulate the location, siting and design of development in sensitive habitats and buffer zones to minimize to the greatest extent possible adverse impacts and enhance positive impacts.

- 1.33 *Performance Criteria and Development Standards*: Establish performance criteria and development standards for development permitted within sensitive habitats and buffer zones, to prevent and if infeasible mitigate to the extent possible significant negative impacts, and to enhance positive impacts.

#### **4.1.14 San Mateo County Significant Tree Ordinance and Resource Management District**

The County of San Mateo Planning and Building Division oversees compliance with the Significant Tree Ordinance of San Mateo County (Part Three of Division VIII of the San Mateo County Ordinance Code). The County has identified that trees and tree communities in San Mateo County are a valuable and distinctive natural resource. A “significant tree” is any live woody plant rising above the ground with a single stem or trunk of a circumference of thirty-eight inches or more measured at 4.5 feet vertically above the ground or immediately below the lowest branch, whichever is lower. This is equivalent to a tree of 12 inches diameter at breast height (DBH).

- The project site is in the RM zoning district, and it is exempt from a permit to remove significant trees; however, tree removal in the RM district must meet other criteria, as follows:
- Tree cutting will not occur within 100 feet of any County or State scenic road or highway, as identified in the San Mateo County General Plan;
- Tree cutting must meet the criteria of sections 6324 through 6326.4 of the San Mateo County Zoning Regulations.

The zoning ordinance sections referenced above address more than tree cutting. Section 6324.2 includes the following guidance relative to natural resources:

“(i) Wherever possible, vegetation removed during construction shall be replaced. Vegetation for the stabilization of graded areas or for replacement of existing vegetation shall be selected and located to be compatible with surrounding vegetation, and should recognize climatic, soil and ecological characteristics of the region.

(j) Removal of living trees with trunk circumference of more than 55 inches measured 4.5 feet above the average surface of the ground (17.5 inches DBH), is prohibited, except as may be required for development permitted under this Ordinance, or permitted under the timber harvesting ordinance, or for reason of actual or potential danger to life and property.

(k) With the exception of trails and paths, and related appurtenances, no structural development shall be permitted where such development will adversely affect a perennial stream and associated riparian habitat.” (note: Cordilleras Creek is not a perennial stream).

And the following from Section 6324.4:

“(f) Development, with the exception of agricultural uses and public works and public safety projects, which might cause significant adverse impacts upon the natural course or riparian habitat of any stream, shall not be permitted. All developments shall be required to perform all feasible measures to mitigate possible impacts upon such areas.”; and

“(h) Projects shall clearly demonstrate methods to be employed for management of vegetative cover, surface water runoff, groundwater recharge, and erosion and sedimentation processes to assure stability of downstream aquatic environments.

Any permit issued for projects in the RM district constitutes a Certificate of Compliance as required by Section 6461 of the San Mateo County Zoning Regulations.

#### **4.1.15 San Mateo County Heritage Tree Ordinance**

San Mateo County Ordinance No. 2427 regulates the removal and trimming of heritage trees on public and private property in unincorporated San Mateo County. A “heritage tree” includes any of the following:

- Class 1 includes any tree or grove of trees so designated after County Board of Supervisors inspection, advertised public hearing and resolution by the Board of Supervisors.
- Class 2 includes a broad array of species of certain size, location, and health. The following list is an excerpt that includes the tree species identified in the arborist report for the project site:
  - coast live oak (*Quercus agrifolia*) of more than 48 inches DBH;
  - California bay or laurel (*Umbellularia californica*) with a single stem or multiple stems touching each other 4 ½ feet above the ground of more than 48 inches in DBH, or clumps visibly connected above ground with a basal area of 20 square feet measured 4 1/2 feet above average ground level;
  - Big-leaf maple (*Acer macrophyllum*) of more than 28 inches DBH east of Skyline Boulevard;
  - Redwood (*Sequoia sempervirens*) of more than 72 inches DBH east of Skyline Boulevard.

A permit is required from the San Mateo County Planning Department to remove, destroy or trim heritage trees growing on any public or private property in unincorporated San Mateo County (Section 11,051). In granting a Heritage Tree Removal/Trimming Permit, the Planning Director sometimes attaches conditions to ensure compliance with the content and purpose of the ordinance, such as, but not limited to, requiring replacement of trees removed with plantings acceptable to the Planning Director (Section 11,052). In addition, Section 11,054 requires protection measures for existing trees when proposed structures or developments encroach on the dripline of any heritage tree.

Approval of the Cordilleras Health System Replacement Project as mitigated will effectively incorporate these requirements into the project and constitute compliance with the substantive requirements of the Heritage Tree Ordinance.

## **4.2 ENVIRONMENTAL SETTING**

### **4.2.1 Vegetation and Habitat Types**

The parcel owned by San Mateo County supports several habitat types, including developed, mixed live oak woodland, jurisdictional waters (Cordilleras Creek), riparian, annual grassland, and California sagebrush scrub. These are described below and are shown in Figures 4-1 and 4-2. The amounts are summarized in Table 4-1. It is surrounded by open space that contains predominantly California sagebrush scrub and mixed live oak woodland. The project, including defensible space, will impact developed, mixed live oak woodland, jurisdictional waters, annual grassland, and California sagebrush scrub, as explained in section 4.3 Project Impacts.

**Table 4-1 Vegetation/Habitat Types and Area within the Entire Parcel plus Easement**

Type	Area (acres)
developed	4.8
Mixed live oak woodland	11.7
Oak-bay laurel association	0.38
Annual grassland	0.07
Creek/jurisdictional waters	0.5
California sagebrush scrub	2.06

#### **4.2.1.1 Developed**

The developed portions of the parcel include the current CMHC campus, San Mateo County Fire Department Station 18, and the Canyon Oaks Youth Center. These areas are landscaped with a variety of common native and non-native ornamental species, including redwood (*Sequoia sempervirens*), magnolia (*Magnolia* sp.), juniper (*Juniperus* sp.), tree of heaven (*Ailanthus altissima*), ornamental plum (*Prunus* sp.), Chinese pistache (*Pistache chinensis*), Monterey cypress (*Cupressus macrocarpa*), giant sequoia (*Sequoiadendron giganteum*), cork oak (*Quercus suber*), sweet gum (*Liquidambar* sp.), white fir (*Abies concolor*), silver wattle (*Acacia dealbata*), birch (*Betula* sp.), holly (*Ilex* sp.), and Monterey pine (*Pinus radiata*). Landscaping also includes lawn, walkways, and a vegetable garden.

Of the total 4.8 acres of developed habitat on the parcel, 3.7 acres are located in the project footprint (including temporary and permanent impacts).

#### **4.2.1.2 Mixed Oak Woodland**

The mixed live oak woodland habitat on the parcel is dominated by a dense canopy of coast live oak (*Quercus agrifolia*) interspersed with less than 30 percent California bay laurel (*Umbellularia californica*), with an understory of shrubs such as poison oak (*Toxicodendron diversilobum*), coyote brush (*Baccharis pilularis*), and Spanish broom (*Spartium junceum*). California buckeye (*Aesculus californica*) and blue elderberry (*Sambucus nigra* subsp. *caerulea*) occur sparsely. The special-status species San Francisco collinsia (*Collinsia multicolor*) occurs in heavily shaded areas of this habitat (Figure 4-2).

There are 11.7 acres of mixed oak woodland on the parcel; 2.3 acres are located in the project footprint.

#### **4.2.1.3 Jurisdictional Waters: Cordilleras Creek**

The parcel and the project footprint are located near the headwaters of Cordilleras Creek. The topographic break for the headwaters is between the site and Interstate 280, on the east side of I-280 (see Hydrology, Figure 8-1 Cordilleras Watershed). The project footprint is in the base of the canyon at an elevation of about 300 feet above mean sea level. Surrounding slopes rise steeply to between 500 and 600 feet above mean sea level. The watershed area above the project site is 255 acres. The project footprint lies in an area that was originally developed circa 1920, although the creek may not have been fully culverted when cottages were built to house the

Canyon Sanatorium. The direction of flow is west to east. Cordilleras Creek flows from the headwaters through urbanized areas of Redwood City and empties into San Francisco Bay.

Cordilleras Creek upstream of the project was dry during multiple site visits in spring and early summer 2014-2019, with no standing water or saturated conditions. The channel bed is rocky, and the creek channel is wide and relatively flat at the main stem headwall but incised in upstream portions. Based on observations of upland vegetation and woodrat houses on the channel banks, and the persistence of San Francisco collinsia in the creek channel bed, it is estimated that the upstream portion of the main stem is intermittent (flowing in the wet season), or may even be ephemeral (flowing after a storm). The USGS quadrangle maps the creek as intermittent. The creek has apparently overtopped its banks at the headwall in the past.

The creek and portions of two tributaries are currently culverted under the developed portions of the site.

**North Tributary.** There is an ephemeral tributary from the north that has a sub-watershed of 6.7 acres. It flows through coast live oak woodland to a deteriorated brick headwall that feeds an existing 24-inch corrugated metal pipe that was intended to direct flows to the downstream outfall east of the developed area. The pipe is rotted at the bottom at the headwall and has failed in at least two locations between the headwall and the downstream outfall. Ephemeral flows from this tributary are probably now absorbed into the ground or may sheet flow toward the existing perimeter road. Flows from this tributary will be captured and directed into the updated storm drain system proposed for the project.

A study completed by ENGEO identifies a debris flow in the watershed of the north tributary that could deposit up to 1,100 cubic yards of rock and soil in the direction of two of the MHRCs. Therefore, a debris catchment system is proposed to be placed across the north tributary to protect the project. The catchment system currently includes two chain-link style fences that span a relatively short distance across the creek, one upstream of the other (see Appendix B, Sheets C0704 and C0705).

**South Tributary.** There is an intermittent tributary that flows from a canyon behind the Canyon Oaks Youth Center, south of the mainstem of the creek. It drains a portion of Edgewood Road and Edgewood Park and Natural Preserve and has a sub watershed of 87.3 acres. The storm drain system in this location is not proposed to be changed. This tributary flows through California sagebrush scrub and coast live oak woodland before it enters the developed portion of the site.

**Mainstem Headwall.** The drainage area above the upstream headwall on the main channel of Cordilleras Creek is 143.6 acres. There is an existing headwall and trash rack inlet structure on the main stem of Cordilleras creek, immediately upstream of the existing perimeter road. These are proposed to remain in place, but the banks around them will be stabilized and planted. Stormwater drainage from retaining walls next to two MHRCs is proposed to be directed to the creek in this location. The vegetation in this area of the creek is mixed live oak woodland, with upland vegetation dominated by Italian thistle on the banks at the inlet.

**Mainstem Outfall.** The existing mainstem outfall is a concrete C-shaped channel that is collapsing into the creek and requires replacement. Over time, stormwater discharge has eroded the creek downstream of the outfall and undermined the concrete outfall channel to the point where it is breaking off in sections. The project proposes to replace this outfall and protect downstream creek resources using rock, large woody debris, and plantings and by reducing the current steepness of the channel, which is being downcut downstream of the mainstem outfall. Vegetation at the outfall and downstream to the parking lot for the Pulgas Ridge Open Space



Preserve is mixed live oak woodland and trees non-native the surrounding habitats, including Monterey pines, giant sequoia, black walnut, and silver wattle acacia.

There are also two storm drains from Edgewood Road that are directed to Cordilleras Creek. One enters the site across from the fire station and ties into the storm drain system under the site. It will not be changed. The other is downstream of the property on Edmonds Road. This outfall will be repaired as part of the project.

#### **4.2.1.4 Coast Live Oak – California Bay Laurel Woodland**

Coast live oak-California bay laurel forest is present on the parcel upstream of the existing development. The dominant vegetation in this area differs from the mixed oak woodland. The riparian canopy is dominated by California bay laurel, with scattered coast live oak and big-leaf maple (*Acer macrophyllum*). California blackberry (*Rubus ursinus*) is dominant on the banks of the creek with Italian thistle, poison hemlock (*Conium maculatum*) Himalayan blackberry (*Rubus discolor*), and poison oak also being abundant. Other species that are present but less common in the riparian forest include mugwort (*Artemisia vulgaris*), bedstraw (*Galium* sp.), hedge nettle (*Stachys ajugoides* var. *rigida*), coastal wood fern (*Dryopteris arguta*), and sword fern (*Polystichum munitum*). The special-status species San Francisco collinsia (*Collinsia multicolor*) occurs in this habitat.

There are 0.5 acre of jurisdictional waters on the project parcel, and about 0.1 acre in the project footprint.

#### **4.2.1.5 California Sagebrush Scrub**

California sagebrush scrub occurs northeast of the project footprint. It is dominated by species adapted to steep slopes and dry conditions. The dominant plant species are California sagebrush (*Artemisia californica*), chemise (*Adenostoma fasciculatum*), coyote brush (*Baccharis pilularis*), and sticky monkey flower (*Mimulus aurantiacus*).

There are 2 acres of California sagebrush scrub on the parcel, and 0.6 acres within the project footprint.

#### **4.2.1.6 Annual Grassland**

One small patch of grassland occurs in the project footprint, dominated by a mix of native and non-native species, including needlegrass (*Stipa* sp.), mule ears (*Wyethia glabra*), oatgrass (*Avena fatua*), ithuriel's spear (*Triteleia laxa*), rigput brome, and Spanish broom.

There is 0.7 acre of annual grassland on the parcel, and all of it is within the project footprint.

#### **4.2.2 Common Wildlife**

Mammals use all habitats on the property. Black-tailed deer (*Odocoileus hemionus*), a fresh kill of a fawn (probably by coyote, *Canis latrans*), and the stick houses of San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) were found during site surveys. Coyote, raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), eastern grey squirrel (*Sciurus carolinensis*), and brush rabbit (*Sylvigalus bachmani*) were not seen during the site visit, but are expected to occur in the habitats available on site, particularly since the project is surrounded by open space. Mountain lion (*Puma concolor*) could also occur, but is expected to be an infrequent visitor due to the proximity to human activity and the barrier created by Interstate 280 (I-280), which lies between the site and significant areas of open space in the Santa Cruz Mountains west of I-280 where mountain lion is known to occur.

Birds that use the site for foraging and breeding habitat include spotted towhee (*Pipilo maculatus*), Pacific slope flycatcher (*Empidonax difficilis*), American robin (*Turdus migratorius*), western scrub jay (*Aphelocoma californica*), red-shouldered hawk (*Buteo lineatus*), Cooper's hawk (*Accipiter cooperii*), bushtit, and California towhee (*Melospiza crissalis*), which were observed or were heard vocalizing during site surveys.

Developed areas of the site may provide breeding and foraging habitat for a variety of common urban-adapted wildlife species. Manmade structures are often used as nesting substrate by such species as black phoebe (*Sayornis nigricans*), and house finch (*Carpodacus mexicanus*), and a variety of bat species are known to take advantage of building crevices or interiors (such as attics) for roosting. Landscaping is frequently used as breeding and foraging habitat for urban adapted passerine bird species. Mammals such as raccoon, Virginia opossum, and California vole (*Microtus californicus*) are likely to occur in the surrounding natural habitats and could also occur in developed areas of the site.

The mixed live oak woodland is occupied by a wide variety of bird species, and several were heard vocalizing during the site visits. The species that are expected to breed and forage in this habitat include at least spotted towhee, oak titmouse (*Baeolophus inornatus*), Pacific slope flycatcher, Stellar's jay (*Cyanocitta stelleri*), chestnut-backed chickadee (*Poecile rufescens*), and bushtit (*Psaltirparus minimus*).

Amphibian species commonly found in riparian habitats include California newt (*Taricha torosa*), western toad (*Anaxyrus boreas*), and Pacific chorus frog (*Pseudacris regilla*), however none were observed during site visits and the creek channel was dry. These species would be less likely to occur in ephemeral drainages.

Coastal sage scrub provides low, dense cover that is good foraging, breeding and migratory habitat for California quail (*Callipepla californica*), California towhee (*Melospiza crissalis*), white-crowned sparrow (*Zonotrichia leucophrys*), wren (*Chamaea fasciata*), brush rabbit, raccoon, and black-tailed deer.

Patches of annual grassland habitat within the project area are limited in size and isolated from other large expanses of similar habitat. Black phoebe, California towhee, Bewick's wren (*Thryomanes bewickii*), and lesser goldfinch (*Carduelis psaltria*) were all observed foraging in the annual grassland habitat. White-throated swift (*Aeronautes saxatalis*) were heard vocalizing overhead and are presumed to use openings in the woodland canopy to forage for insects. Black-tailed deer, observed during the surveys, likely use these grassy areas as foraging habitat, along with brush rabbit, Botta's pocket gopher (*Thomomys bottae*), and California vole. Common reptile species that were not observed but are found in grassland habitats include western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis catenifer*), and southern alligator lizard (*Elgaria multicarinata*).

#### 4.2.3 Wildlife Corridors

The project site lies immediately north of Edgewood Road, and is slightly east of I-280. Edgewood Park and Natural Preserve occurs to the south, on the other side of Edgewood Road, but is separated from the property by the road and a steep roadcut. The Pulgas Ridge Open Space Preserve surrounds the property on the west, north and east sides. While the main building is fenced, the property is generally open to wildlife movement. There are drainages and unpaved roadways that may facilitate wildlife movement, but no obvious or specific wildlife corridors were identified during site surveys.

#### 4.2.4 Special-status Species

A special-status species is defined as a species meeting one or more of the following criteria:

- Listed, proposed for listing, or candidate for possible future listing as threatened or endangered under the Federal Endangered Species Act (FESA, 50 CFR §17.12);
- Listed or candidates for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA, Fish and Game Code §2050 et seq.);
- Listed as rare under the California Native Plant Protection Act (Fish and Game Code §1900 et seq.);
- Listed as a Fully Protected Species (Fish and Game Code §§3511, 4700, 5050, and 5515)
- Listed as a CSSC on California Department of Fish and Wildlife's Special Animals list (CDFW 2015); or
- Plant species listed in the CNPS Rare Plant Program *Inventory of Rare and Endangered Plants of California* for San Mateo County

The California Natural Diversity Database (CNDDDB) and California Native Plant Society (CNPS) Rare Plant Inventory for special-status species occurrences within the USGS Woodside Quadrangle (where the project site is located) and eight surrounding quads were searched to identify special-status species that have been documented to occur in the region. Special-status species and their regulatory status, geographic distribution in California, habitat requirements, life form and blooming period (plants only), and potential to occur on the project site are listed in the tables in Appendix D.

Most of the CNDDDB- and CNPS-listed species identified in the database searches have no or low potential to occur on the project site based on distance from known occurrences, a lack of suitable habitat on the project site, and/or because the site is outside of the species range. In addition, most of the CNPS-listed plant species with the potential to occur on the site based on nearby occurrences and suitable habitat on the site were not found during specific surveys for the species conducted in April 2015 and June 2018; therefore they are considered to have a low potential to occur on the site. Two special-status species are known to occur on the project site: San Francisco collinsia, and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). Two special-status bat species, pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*), have a moderate potential to occur based on nearby occurrences and suitable habitat on the project site. These special-status species are described below.

A Biological Constraints Analysis identifying special-status species and sensitive habitat types on the property was prepared in 2014. In addition to the species identified above, the Biological Constraints Analysis indicates that the site is potential dispersal habitat for three aquatic species that were found to have a very low potential to occur: California red-legged frog (*Rana draytonii*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) and western pond turtle (*Emys marmorata*). Therefore, each of these species is also described below.

##### 4.2.4.1 San Francisco Collinsia

San Francisco collinsia is an annual herb in the plantain (plantaginaceae) family. It is a CRPR 4.2 plant, meaning it is on the Watch List and is considered to be moderately threatened. It is endemic to California and is found in Monterey, Marin, Santa Clara, Santa Cruz, San Francisco and San Mateo counties. It occurs in closed-cone coniferous forest and in coastal scrub from 100

to 820 feet, sometimes on serpentine. It blooms from March through May. It is threatened by non-native plants and urbanization.

One CNDDDB occurrence for San Francisco collinsia has been documented within five miles of the project site. This species was observed in several locations west of the project footprint (Figure 4-1 Vegetation and Habitat Types) in deeply shaded riparian and mixed oak woodland.

#### **4.2.4.2 Western Leatherwood**

Western leatherwood, a CRPR 1.B.2 plant, is a deciduous shrub in the daphne (Thymelaeaceae) family. It is endemic to California and is found in Alameda, Contra Costa, Marin, Santa Clara, San Mateo, and Sonoma counties. It occurs on cool, moist slopes in foothill woodland and riparian forests from 150 to 1200 feet, generally in the fox belt. It blooms generally from January to April, however in recent years populations at Jasper Ridge (Stanford campus) have bloomed as early as October. It is limited in distribution due to habitat requirements.

Western leatherwood occurs in nearby Pulgas Ridge Open Space Preserve and Edgewood Park and Natural Preserve. It was not found on the project site during site surveys for it in 2015 and 2018.

#### **4.2.4.3 California Red-legged Frog**

The federally listed threatened California red-legged frog (CRLF) is endemic to California and Baja California, Mexico, at elevations ranging from sea level to approximately 5,000 feet. Records of CRLF are known from Riverside County to Mendocino County along the Coast Range; from Calaveras County to Butte County in the Sierra Nevada; and in Baja California, Mexico. CRLF is still locally abundant within portions of the San Francisco Bay area and the central coast. Within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse ranges. The species is believed to be extirpated from the southern Transverse and Peninsular ranges, but is still present in Baja California, Mexico (USFWS 2010).

As a species, CRLF is currently threatened by human activities: degradation and loss of its habitat through urbanization, mining, improper management of grazing, recreation, invasion of nonnative plants, impoundments, water diversions, degraded water quality and introduced predators. These factors have resulted in the isolation and fragmentation of habitats within many watersheds. This often prevents dispersal between sub-populations. The fragmentation of existing habitat, and the continued colonization of existing habitat by non-native species, may represent the most significant current threats to CRLF (USFWS 2010).

CRLF is the largest native frog in the western United States, ranging from 1.5 to 5 inches. The abdomen and hind legs of adults are reddish. The back has small black flecks and larger irregular dark blotches. These have indistinct outlines on a brown, gray, olive, or reddish background color. The spots on the frogs' backs usually have light centers. Lateral folds are prominent on the back. Larvae (tadpoles) range from 0.6 to 3 inches in length, and the background color of the body is dark brown and yellow with darker spots (USFWS 2010).

CRLF occupies a fairly distinct habitat, combining both specific aquatic and riparian components. Adults need dense, shrubby or emergent riparian vegetation closely associated with deep (greater than 2 1/3-foot deep) still or slow-moving water. The largest densities of CRLF are associated with deepwater pools with dense stands of overhanging willows and an intermixed fringe of cattails. Well-vegetated terrestrial areas within the riparian corridor may provide important sheltering habitat during winter. CRLF estivates (enters a dormant state during

summer or dry weather) in small mammal burrows and moist leaf litter. They have been found up to 100 feet from water in adjacent dense riparian vegetation (USFWS 2010). Frogs migrate between upland habitat and breeding habitat in no particular direction (i.e., not necessarily along creek channels), and may move as far as 1.7 mile (Bulger et al., 2003).

CRLF breeds from November through March with earlier breeding records occurring in southern localities (USFWS 2010).

The diet of CRLF is highly variable. Larvae probably eat algae. Invertebrates are the most common food items of adult frogs. Vertebrates, such as Pacific tree frogs and California mice, are frequently eaten by larger frogs. Juvenile frogs are active both during the day and at night, whereas adult frogs are largely nocturnal. Feeding activity likely occurs along the shoreline and on the surface of the water (USFWS 2010).

Sixteen CNDDB occurrences for CRLF have been documented within five miles of the project site, although it has never been documented in Cordilleras Creek. The nearest CRLF occurrences recorded in the CNDDB are reported from 2007 and include sites at the southern end of the Crystal Springs Reservoir and along Canada Road south of the intersection with Edgewood Road. These specific sites are 1 to 2 miles from the project. All occurrences are on the west side of I-280, which poses a significant migratory barrier. However, CRLF could disperse into Cordilleras Creek via tributaries that come from Edgewood Park. Laguna Creek at I-280 in Edgewood Park, which is in the watershed of Crystal Springs Reservoir, could provide habitat for CRLF, although no sightings are reported from Edgewood Park. There is 1.75 mile of upland habitat between Laguna Creek and the tributaries in the Cordilleras Creek watershed. There is no suitable breeding habitat for this species on the site, and it is not expected to persist on the project site based on the habitat present. However, because CRLF is documented to occur within 1 to 2 miles of the project site, its possible occurrence is not ruled out.

#### **4.2.4.4 San Francisco Garter Snake**

Historically, the federally and state listed endangered San Francisco garter snake (SFGS) occurred in scattered wetland areas on the San Francisco Peninsula from approximately the San Francisco County line south along the eastern and western bases of the Santa Cruz Mountains, at least to the Upper Crystal Springs Reservoir, and along the coast south to Año Nuevo Point, San Mateo County, and Waddell Creek, Santa Cruz County. Currently, although the geographical distribution may remain the same, reliable information regarding specific locations and population status is not available. Much of the remaining suitable habitat is located on private property that has not been surveyed for the presence of the snake. Many locations that previously had healthy populations of SFGS are now in decline for the reasons described below (USFWS 2007).

Many of the threats that led to the listing of SFGS in 1967 continue to impact the species. These include loss of habitat from agricultural, commercial and urban development and collection by reptile fanciers and breeders. These historical threats to the species remain, but there are now additional threats to the species, such as the documented decline of the CRLF (an essential prey species) and the introduction of bullfrogs (*Rana catesbeiana*) into SFGS habitat. Bullfrogs are capable of preying on both SFGS and CRLF. Extirpation of CRLF in SFGS habitat is likely to cause localized extinction of the snake (USFWS 2007).

SFGS is a slender, colorful snake in the Colubridae family, which includes most of the species of snakes found in the western United States. This subspecies has a burnt orange head, greenish-yellow dorsal stripe edged in black, bordered by a red stripe, which may be continuous or broken

with black blotches, and then a black stripe. The belly color varies from greenish-blue to blue. Large adults can reach 3 feet or more in length (USFWS 2007).

The snakes' preferred habitat is a densely vegetated pond near an open hillside where it can sun, feed, and find cover in rodent burrows; however, considerably less ideal habitats can be successfully occupied. Temporary ponds and other seasonal freshwater bodies are also used. Emergent and bankside vegetation such as cattails (*Typha* spp.), bulrushes (*Scirpus* spp.) and spike rushes (*Juncus* spp. and *Eleocharis* spp.) apparently are preferred and used for cover. The area between stream and pond habitats and grasslands or bank sides is used for basking, while nearby dense vegetation or water often provide escape cover. Snakes also use floating algal or rush mats, if available (USFWS 2007).

Adult snakes sometimes estivate (enter a dormant state) in rodent burrows during summer months when ponds dry. On the coast, snakes hibernate during the winter, but further inland, if the weather is suitable, snakes may be active year-round. Recent studies have documented SFGS movement over several hundred yards away from wetlands to hibernate in upland small mammal burrows; the Center for Biological Diversity reports a migration distance of 0.6 mile. Although primarily active during the day, captive snakes housed in an outside enclosure were observed foraging after dark on warm evenings (USFWS 2007).

SFGS forages extensively in aquatic habitats. Adult snakes feed primarily on CRLF. They may also feed on juvenile bullfrogs, but they are unable to feed on the larger adults. Adult bullfrogs likely prey on smaller SFGS and may be a contributing factor in its decline. Newborn and juvenile SFGS depend heavily upon Pacific treefrogs as prey. If newly metamorphosed Pacific treefrogs are not available, the young may not survive (USFWS 2007).

Females give birth to live young from June through September, with litters averaging 16 newborns. The snakes are extremely shy, difficult to locate and capture, and quick to flee to water or cover when disturbed (USFWS 2007).

SFGS has been documented by the CNDDB within two miles of the project site in the Crystal Springs watershed, although it has not been documented to occur in Cordilleras Creek or its watershed. All occurrences are on the west side of I-280, which poses a significant migratory barrier. There is no suitable breeding or aquatic habitat (ie., wetlands or ponds) for this species on the site, or between the site and known breeding sites. Cordilleras Creek is urbanized downstream of the project past Edgewood Park and Natural Preserve, so the creek channel is constricted and wetlands that would support SFGS are not present. Therefore, this species is highly unlikely to occur on the site.

#### **4.2.4.5 Western Pond Turtle**

Western pond turtle, a California species of special concern, is the only turtle native to California (CDFG 2008). It was found historically in most Pacific slope drainages between the Oregon and Mexican borders. It is still found in suitable habitats west of the Sierra–Cascade crest. Elevation range is from near sea level to approximately 4,700 feet (1,430 meters) (Jennings and Hayes 1994).

Western pond turtle is associated with a variety of aquatic habitats, both permanent and intermittent. The name western “pond” turtle is something of a misnomer, as ponds are relatively scarce throughout most of the range of this species, and the turtles are more often associated with rivers and streams. They are usually rare or absent in reservoirs, impoundments, canals, or other bodies of water heavily altered by humans. Western pond turtle inhabits some of the larger rivers

within its range (e.g., the Sacramento, Klamath, and Willamette), but is usually restricted to areas near the banks or in adjacent backwater habitats where the current is relatively slow and abundant emergent basking sites and refugia exist. Western pond turtle may be found in slower moving streams where emergent basking sites are available, but generally avoids heavily shaded areas. In some areas of California, intermittent streams hold sizeable populations. Turtles are also known to use ephemeral pools.

Western pond turtle lives up to 50 years but reproduces relatively infrequently. Mature turtles weigh up to two pounds and measure up to 8 inches. Females take an average of eight to 10 years to reach sexual maturity and when mature, lay only 6 to 10 eggs a year. As a result, pond turtle populations can decline rapidly with the loss of only a few adults. Eggs are laid from March to August, depending on local conditions, and incubation lasts from 73 to 80 days. Females lay their eggs in underground nests on land. Western pond turtle nests have been found as far as 0.25 mile from a stream (Reese and Welsh 1997) in open sunny areas on hill slopes, generally with a south to southwest facing aspect. Nest sites typically occur in open areas dominated by grasses or herbaceous annuals on dry, well-drained soils with high clay/silt content and low (less than 15-degree) slope (Holland 1994). There is some indication that most nesting excursions occur at night (Rathbun *et al.* 2002). Western pond turtle also moves into upland slopes while overwintering or during periods when aquatic habitats become unsuitable (i.e., dry).

Western pond turtle is omnivorous and feeds on aquatic plant material, aquatic invertebrates, fishes, frogs, and even carrion (CDFG 2008). Common predators of nests, nested hatchlings, and adult turtles in the wild include raccoons, skunks, and coyotes; although the largest threats western pond turtle face presently are the predation of hatchlings by introduced, non-native bullfrogs, and the loss of habitat due to urbanization.

Eight CNDDDB occurrences for western pond turtle have been documented within five miles of the project site, although it has never been documented to occur in Cordilleras Creek. The closest occurrence is about 2 miles away near the Crystal Springs Reservoir. All occurrences are on the west side of I-280, which poses a significant migratory barrier. There is no suitable breeding habitat for this species on the site, and the upland habitat is heavily shaded. Due to a lack of suitable habitat onsite, the distance to nearby populations and lack of suitable habitat in between, and the significant barrier imposed by an 8-lane freeway (I-280), the likelihood that western pond turtle occurs on the project site is low.

#### **4.2.4.6 Pallid Bat**

The pallid bat, a California species of special concern, is nocturnal and hibernates in winter. It occupies day roosts in caves, crevices, mines, and occasionally in hollow trees and buildings. Roosts must protect bats from high temperatures. Bats move deeper into cover if temperatures rise. Night roosts may be in more open sites, such as porches and open buildings. Few hibernation sites are known, but it probably uses rock crevices. Maternity colonies form in early April and may have a dozen to 100 individuals. Males may roost separately or in the nursery colony. Pallid bats mate from late October through February. Fertilization is delayed, so that the young are born from April through July, mostly from May through June. There are one to two litters per year. Pallid bats eat a wide variety of insects and spiders (CDFG 1999).

Two CNDDDB occurrences for pallid bat have been documented within 5 miles of the project site. The project site contains suitable roost and forage habitat for this species; therefore, it has a moderate potential to occur on the site.

#### **4.2.4.7 Townsend's Big-eared Bat**

The Townsend's big-eared bat, a California species of special concern, is nocturnal and hibernates in winter. It requires caves, mines, tunnels, buildings, or other human-made structures for roosting. It may use separate sites for night, day, hibernation, or maternity roosts. Maternity roosts are found in caves, tunnels, mines, and buildings. Small clusters or groups (usually fewer than 100 individuals) of females and young form the maternity colony. The babies are born in May and June, and a single litter of one is produced annually. Young are weaned in six weeks and fly in 2.5-3 weeks after birth, so the maternity season generally extends from May to September. Insects are the principal food of this species, and Townsend's big-eared bats capture their prey in flight using echolocation, or by gleaning from foliage. This species prefers mesic habitats (CDFG 1999).

One CNDDDB occurrence for Townsend's big-eared bat has been documented within five miles of the project site. The project site contains suitable roost and forage habitat for this species; although this species is sensitive to human disturbance, it has a moderate potential to occur on the site.

#### **4.2.4.8 San Francisco Dusky-footed Woodrat**

The San Francisco dusky-footed woodrat is a California species of special concern. It occurs from the Golden Gate to just inside the Santa Cruz County line and also in the east bay. It is associated with riparian, oak woodland and redwood forest. The San Francisco dusky-footed woodrat is one of 11 subspecies of dusky-footed woodrat that live in California and the arid west. San Francisco dusky-footed woodrat is a medium-sized rodent, with a body around seven inches long, nose to rump, and a furred tail. Dusky-footed woodrats are relatively common and widespread on the San Francisco Peninsula, but their complex social structure makes them particularly vulnerable to disturbance.

The San Francisco dusky-footed woodrat builds mounded stick houses that may range in size from 3 to 8 feet across at the base and as much as 6 feet tall, and they tend to live in colonies of 3 to 15 or more houses. The houses can be quite complex inside, with multiple chambers for general living, nesting, latrine use, food storage, and other activities.

Each house is occupied by a single adult; adult females share the house with their litters for a few months until the young disperse to nearby nests. Adult females live in the same house until they die, when the house is taken over by one of the female offspring. In this manner houses may be occupied and maintained by the same family for decades. Individual houses may persist for 20 to 30 years. Reptiles, amphibians, small mammals, and invertebrates are often commensal with the woodrats, sharing the houses for shelter. San Francisco dusky-footed woodrat houses provide protection from temperature and moisture extremes and allow animals that might not otherwise tolerate local conditions to live there, increasing the biotic diversity.

San Francisco dusky-footed woodrat eats grasses, leaves, fresh fruits, small bulbs, bark, and flowers (English 1923), and caches dry foods like hazel nuts and acorns (English 1923). On the peninsula it commonly builds its house in poison oak, and it eats the leaves and berries.

San Francisco dusky-footed woodrat is a popular prey item for a number of species, including hawks, owls, bobcat, coyote, long-tailed weasel among others.

San Francisco dusky-footed woodrat is present on the project property but is not currently present within the project footprint.



#### **4.2.5 Sensitive Natural Communities**

CDFW and CNPS have identified several natural communities that are rare and unique to California. While they have no legal, protective status, impacts to these communities may be considered significant under CEQA. The County also defines sensitive habitat, as noted under the San Mateo County General Plan, above.

The project site supports developed, mixed oak woodland, creek channel/riparian, coastal sage scrub, and annual grassland habitat. Of these, the mixed oak woodland, Cordilleras Creek, and riparian woodland are sensitive natural communities.

#### **4.2.6 Jurisdictional Waters**

Cordilleras Creek and the northern tributary that are within the project footprint have a distinct channel and banks that fall within the jurisdiction of the U.S. Army Corps of Engineers (USACE), the California Regional Water Quality Control Board (RWQCB), and CDFW. No freshwater emergent wetlands were found on the project property. Any work within jurisdiction will require authorization from these agencies. That includes proposed headwalls, outfalls, storm drain, and MHRC E, which affects a portion of the northern tributary.

The Cordilleras Creek channel varies in width from 20 feet to 40 feet, measured from bank top to bank top. The low flow channel is shallow (6 inches) and narrow (2 feet), and the creek is identified by the USGS as intermittent. Jurisdictional waters are shown on Figures 4-1 and 4-2.

### **4.3 PROJECT IMPACTS**

#### **4.3.1 Thresholds of Significance**

Based on Appendix G of the CEQA Guidelines and the San Mateo County Initial Study Environmental Evaluation Checklist, the proposed project would have a significant impact to biological resources if it would:

- (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 CDFW or USFWS (see 4.3.2 Special-status Species, below);
- (b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS (see 4.3.3 Sensitive Natural Communities, below);
- (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, hydrologic interruption, or other means (No wetlands are present, see first bullet below; jurisdictional waters are discussed in 4.3.4 Jurisdictional Waters, below);
- (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 (see second bullet below);
- (e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including the County Heritage and Significant Tree Ordinances) (see 4.3.5 Local Policy/Ordinance Conflicts, below);

- (f) Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state HCP (No impact, see the third bullet below);
- (g) Be located inside or within 200 feet of a marine or wildlife reserve (no impact, see the fourth bullet below); or
- (h) Result in loss of oak woodlands or other non-timber woodlands (see 4.3.6 Loss of Oak Woodland, below).

The proposed project would have no or minimal impact with regard to the following thresholds; therefore, these issues are dismissed from further discussion in the sections below:

- Wetlands. The project site contains creek channel and riparian vegetation, but it does not support jurisdictional wetlands. The project will not impact wetlands either directly or indirectly.
- Wildlife Corridors. It is unlikely that fish migrate through the part of Cordilleras Creek on the project site because of intermittent flows and barriers to fish movement between the site and San Francisco Bay. The existing CMHC facility is fenced, but is surrounded by open space, and there are pathways open for wildlife movement around the facility. Because there is open space on all sides of the development it is expected that wildlife could continue to move through the area without being significantly impeded by fencing of the hospital yard. The debris catchment system proposed for the north tributary includes two discrete, relatively short stretches of fencing that will not prevent wildlife movement through the area. No evidence of a significant nursery site was found during multiple surveys.
- Conservation Plans. The project is not within the study area of any approved or anticipated habitat conservation plans or natural community conservation plans.
- Marine or Wildlife Reserves. The project is not located near a marine reserve. The project site is surrounded by the Pulgas Ridge Open Space Preserve to the north, east and west and by Edgewood Park and Natural Preserve to the south; both the Preserve and the Park provide protected space for wildlife. The project would not change the existing land use at the site and both the capacity of the new CMHC facility and its location on the property would be similar to existing conditions. Therefore, the proposed project is not expected to impact adjacent protected space for wildlife. The project is not located near a marine reserve.

#### 4.3.2 Special-status Species

Special-status species occur in the area around the project site and could be impacted during project construction, including plants, amphibians and reptiles, and mammals. The project must also comply with state and federal laws protecting nesting birds and nongame mammals. The potential impacts to special status species are *less than significant with mitigation incorporated*, as explained below.

**Rare Plants.** The project currently avoids mapped locations of watchlist plant San Francisco collinsia; however, Mitigation Measure BIO-1, Worker Education and Installation of Environmentally Sensitive Habitat Fencing, is recommended to prevent inadvertent impacts to this species in adjacent areas.

However, San Francisco collinsia does occur within the areas that could be managed as defensible space for wildfire. The plants could be damaged or removed during those activities, resulting in a significant impact. Mitigation Measure BIO-2, Defensible Space Management Plan and Pre-activity Surveys, is recommended to protect this species within the defensible space management areas.

With the implementation of Mitigation Measures BIO-1 and BIO-2 the impacts to special status plant species will be less than significant.

**Reptiles and Amphibians.** California red-legged frog, San Francisco garter snake, and western pond turtle are known to occur in the Crystal Springs watershed west of the project site. There is no breeding habitat present on the project site for these species, and this section of Cordilleras Creek is intermittent. There is a low likelihood that these species would occur on the site as a result of migrating through to other habitat locations. However, if the species do happen to be on site during construction, project construction impacts could potentially be significant. Measure BIO-1, Worker Education and Installation of Environmentally Sensitive Habitat Fencing, Mitigation Measure BIO-3, Pre-construction Surveys for Special-status Amphibian and Reptile Species, and Mitigation Measure BIO-9 Good Housekeeping, are recommended to prevent impacts to these species. These measures will reduce a potentially significant impact to special-status reptile and amphibian species to less than significant.

**Birds.** The bird nesting season is generally February 1 – September 15, with most active nesting occurring in the spring and early summer. Implementation of Mitigation Measures BIO-5a and BIO-5b, pre-construction nesting bird surveys and nest buffer establishment and monitoring, will assure compliance with state and federal laws that protect nesting birds. These measures will reduce the potential impact to nesting birds to less than significant. The project results in impacts to 3.4 acres of habitat, including primarily coast live oak woodland (2.5 acres). The proposed landscape plan incorporates 24 to 36-inch box-size coast live oak, among other species (see discussion in Section 4.3.5 below), and will replace 2.6 acres of nesting habitat, not counting nesting that may occur on the buildings. so that approximately an acre of nesting habitat will be replaced in landscaping. The site is surrounded by hundreds of acres of suitable nesting habitat that is currently protected in open space. In the context of the surrounding habitat that is either protected as open space or is not planned for future development, the loss of less than an acre of nesting habitat is not significant.

**Mammals.** The property contains occupied stickhouses of the San Francisco dusky-footed woodrat. No houses are currently mapped in the project footprint, but new houses could be established within the footprint between now and the start of construction. Mitigation Measure BIO-1, Worker Education and Installation of Environmentally Sensitive Habitat Fencing will protect San Francisco dusky-footed woodrat outside of the grading footprint. Mitigation Measures BIO-4a and BIO-4b, Pre-construction survey for woodrat houses and relocation of woodrats will mitigate impacts to woodrats if any are found within the project footprint during pre-construction surveys and reduce the potentially significant impact to woodrats to less than significant.

Two bat species that are state Species of Special Concern could forage or roost on the project site. These species typically roost in caves or abandoned buildings, but they also roost in tree cavities and porches. Mitigation Measures BIO-6a and BIO-6b, pre-construction, pre-demolition, and exclusion measures will reduce potentially adverse impacts to bats to less than significant.

### 4.3.3 Sensitive Natural Communities

Sensitive natural communities on the project site include an area upstream of the project that is dominated by a coast live oak – California bay laurel forest association that is designated as a sensitive natural community by the state (71.060.48 Q. agrifolia-U. californica; G3). It is mapped on Figure 4-1. The rare San Francisco collinsia also occurs in this habitat. This sensitive natural community is outside of the project construction footprint, however, it may be affected by maintenance of the defensible space for wildfire management. Implementation of mitigation measures BIO-1 Worker Education and Installation of Environmentally Sensitive Habitat Fencing, BIO-2 Prepare a Defensible Space Management Plan would reduce potentially adverse impacts to sensitive natural communities and rare plants to *less than significant with mitigation incorporated*.

Cordilleras Creek is also a sensitive habitat. It will be impacted when stormwater management systems are installed. Please see the discussion of creek impacts under Jurisdictional Waters, below.

### 4.3.4 Jurisdictional Waters

A wetland and jurisdictional waters delineation was completed for the project site using US Army Corps of Engineers methods. The project site does not contain wetlands, but it does contain creek habitat subject to the jurisdiction of the US Army Corps of Engineers, the Regional Water Quality Control Board, and the California Department of Fish and Wildlife. The project will impact a net total of 0.1 acre of jurisdictional waters, including 0.07 acre of temporary impacts and 0.03 acre of permanent impacts. The County is required to obtain permits from these three agencies for activities within their jurisdiction. The agencies also take jurisdiction over the storm drain system under the project site and will be reviewing all aspects of the project for impacts to biological resources and water quality. Compliance with state and federal permits required for the project and Mitigation Measures BIO-7 *Habitat Mitigation and Monitoring Plan* and Mitigation Measure BIO-10 *Outfall Restoration Plan* will ensure that impacts are *less than significant with mitigation incorporated*.

The proposed project would increase impervious surfaces within the project site by 0.96 acre, replace and realign a culvert that carries Cordilleras Creek flow beneath the existing project site, replace and redirect a culvert that carries flow from the northern tributary, and assure that the culvert system can handle flows from a 100-year, 6-hour storm event. The general drainage pattern would be similar to existing conditions.

### 4.3.5 Conflict with Local Policies or Ordinances Protecting Biological Resources

The San Mateo County General Plan has several policies that protect biological resources. Trees are also specifically protected by the Significant Tree Ordinance and the Heritage Tree Ordinance.

#### 4.3.5.1 San Mateo County General Plan Policies

The San Mateo County General Plan contains several policies focused on protection of biological resources. Most of them relate to regulating development activities to minimize impacts to these resources. Several design scenarios were studied for the Cordilleras project, including scenarios that required significantly greater impacts to biological resources. The current project keeps project impacts as close to the existing developed areas as feasible, considering site and operational constraints. The landscaping plan for the project aims to replace native habitat and functions and values. Necessary structures in the creek are designed using

bioengineering methods where feasible. Stormwater management and pollution prevention measures incorporated into the project will improve existing conditions. The project complies with General Plan policies.

#### 4.3.5.2 San Mateo Significant Tree Ordinance

The San Mateo County Significant Tree Ordinance requires replacement of existing vegetation whenever possible and prohibits the removal of trees 17.5-inches DBH or greater except in certain circumstances. The project is in the RM district and is exempt from this ordinance. However, project impacts will be mitigated due to significant impacts triggered by removal of oak woodland and the need to comply with the San Mateo County Heritage Tree ordinance, described below. The impacts to heritage trees and oak woodland will be ***less than significant with mitigation incorporated***, including Mitigation Measures BIO-7 and BIO-8.

#### 4.3.5.3 San Mateo County Heritage Tree Ordinance

The Heritage Tree Ordinance identifies coast live oaks of more than 48-in DBH, California bay laurel of more than 48-in DBH, redwood of more than 72-in DBH, and big-leaf maple of more than 28-in DBH east of Skyline Boulevard as heritage trees. The project requires removal of four trees that meet the definition of heritage tree under the ordinance, as summarized in Table 4-4. These trees are all north of the existing facility near the northern tributary and can be found on sheet C1.03 of the project plan set.

Table 4-4 Heritage-Sized Trees to be Removed			
Species	Tree Tag #	Tree Size DBH (inches)	Condition <sup>1</sup>
Bay laurel ( <i>Umbellularia californica</i> )	1855	65	Very good
Oak ( <i>Quercus agrifolia</i> )	1877	16, 15, 12, 10	Fair
Oak ( <i>Quercus agrifolia</i> )	1894	29, 28	Fair
Oak ( <i>Quercus agrifolia</i> )	1853	20, 18, 50, 10	Good
<sup>1</sup> Trees in poor or very poor condition do not meet the healthy tree criterion and are not considered County Heritage Trees.			
Source: Ralph Osterling Consultants, Inc. (2015); BKF Engineers (2019)			

Trees adjacent to construction would experience root loss or damage during excavation and construction activities. Mitigation Measure BIO-7 *Habitat Mitigation and Monitoring Plan* requires mitigation for the loss of oak woodland. Mitigation Measure BIO-8 *Tree Protection Plan* would protect remaining trees.

Approval of the Cordilleras Health System Replacement Project as mitigated would effectively incorporate these requirements into the project and constitute compliance with the substantive requirements of the Heritage Tree Ordinance. Therefore, the impacts are ***less than significant with mitigation***.

#### 4.3.6 Loss of Woodlands

Site development requires removal of 2.3 acre of oak woodland, including 160 native trees 4 inches DBH or greater (Table 4-2). The loss of oak or other non-timber woodlands in San Mateo

County is considered a significant biological impact per San Mateo County's CEQA Checklist. The project will also impact 0.075 acre of grassland, 0.63 acre of California sagebrush scrub, 0.1 acre of creek habitat, and 3.7 acres of developed habitat.

<b>Table 4-2 Summary of Trees to be Removed</b>			
<b>Tree Species</b>	<b>Common Name</b>	<b>Number</b>	<b>Native Locally</b>
<i>Acacia</i> sp.	Acacia	7	No; invasive
<i>Ailanthus altissima</i>	Tree of Heaven	1	No; invasive
<i>Umbellularia californica</i>	California bay laurel	38	Yes
<i>Betula</i> sp.	birch	3	No
<i>Aesculus californica</i>	buckeye	5	Yes
<i>Casuarina</i> sp.	casuarina	1	No
<i>Pistacia chinensis</i>	Chinese pistache	2	No
<i>Quercus agrifolia</i>	Coast live oak	102	Yes
<i>Quercus suber</i>	Cork oak	1	No
<i>Sambucus</i> sp.	elderberry	1	Yes
<i>Sequoiadendron giganteum</i>	Giant sequoia	9	No
<i>Ilex</i> sp.	holly	5	No
<i>Juniperus</i> sp.	juniper	3	No
<i>Magnolia</i> sp.	magnolia	1	No
<i>Pinus radiata</i>	Monterey pine	34	No
<i>Sequoia sempervirens</i>	Coast redwood	11	Yes
<i>Liquidambar</i> sp.	Sweet gum	2	No
<i>Juglans californica</i>	Black walnut	8	No
<i>Abies concolor</i>	White fir	2	No
<i>Salix</i> sp.	willow	3	Yes
Total		160 native; 79 non-native	6 locally native species; 14 landscape species not locally native

Oak woodland provides the following biological functions and values:

- Wildlife habitat, including forage, nesting, and breeding habitat for common wildlife species, supporting ecosystem balance;
- Watershed and water quality protection by protecting soils from stormwater erosion and downstream waters from heavy sediment loads;
- Soil development as a result of leaf litter that breaks down into topsoil;
- Air quality as a result of oxygen production and carbon dioxide reduction; and
- Human enjoyment of nature.

The project includes a landscaping plan dominated by native plant species suitable to the canyon woodland environment. The landscape plan increases the amount of cover and diversity of species over what is currently found in the developed areas of the site, and partially replaces woodland functions and values on the site. The landscape plan will be incorporated into the Habitat Mitigation and Monitoring Plan to assure that implementation of the project landscape plan results in replacement of habitat on the parcel in addition to any measures to be implemented off site.

The project landscape plan includes predominantly native species, including species that will be removed as a result of site development. The landscape plan incorporates 24- and 36-inch box trees and 15-gallon trees that will be maintained and are expected to provide habitat for insects, reptiles, and birds within five years of initial impacts. In addition to the landscape plan the areas around the perimeter of the project that are temporarily impacted will be revegetated.

The landscape plan proposed for the project includes replanting of 176 native trees in addition to native shrub, forb and grass species. The trees range in size from 15 gallon to 36-inch box, including (15) 24-inch box native oaks (*Quercus agrifolia*, *Q. lobata*), (12) 36-inch box native willows (*Salix lasiolepis*), and (18) 24-inch box coast redwoods (*Sequoia sempervirens*). In total, the landscape plan will restore 0.96 acre of woodland and 0.61 acre of grassland/coastal scrub habitat (Table 4-2). In addition, mitigation measure BIO-7 *Habitat Mitigation and Monitoring Plan* requires restoration of areas temporarily impacted during construction by planting native species and controlling invasive non-native plants such as broom, thistle, and acacia until native plants are dominant. Mitigation Measure BIO-10 *Riparian Restoration Plan* requires a planting plan for the updated outfall at the downstream end of the project.

<b>Table 4-3 Vegetation Impacts and Replacement</b>				
<b>Vegetation Type</b>	<b>Acres Impacted</b>	<b>Acres Functionally Replaced by Proposed Landscaping</b>	<b>Temporary Impacted Area to be Restored</b>	<b>Net Amount</b>
Grassland	0.075	0.65 (hydroseed meadow mix)	0.31 (perimeter hydroseeding)	0.88 ac added
California sagebrush scrub	0.63	0.45 (low water use planting)	0.3	0.12 ac added
Creek	0.1	0	0.07	0.03 ac permanent impacts
Mixed oak woodland	2.35	0.96 (trees and shrubs)	0	1.39 ac net loss
Total (not including Developed)	3.15	2.06	0.68	0.41 ac habitat loss

**Table 4-4 List and Size of Trees Proposed in the Landscaping**

<b>Tree Species</b>	<b>Common Name</b>	<b>Size to be Planted</b>	<b>Native Locally/Value</b>
<i>Acer circinatum</i>	Vine maple	15 gallon	No; nesting, cover, seed
<i>Acer macrophyllum</i>	Bigleaf maple	15 gallon	Yes; nesting, cover, seed
<i>Arbutus 'marina'</i>	Strawberry tree	15 gallon	No; nesting, cover
<i>Cercis occidentalis</i>	Western redbud	15 gallon	Yes; nesting, cover, nectar
<i>Myrica californica</i>	Pacific wax myrtle	15 gallon	Yes; nesting, cove, nectar
<i>Platanus racemosa</i>	California sycamore	15 gallon	Yes; nesting, cover
<i>Quercus agrifolia</i>	Coast live oak	24-inch box	Yes; nesting, cover, acorns
<i>Quercus lobata</i>	Valley oak	24-inch box	Yes; nesting, cover, acorns
<i>Salix lasiolepis</i>	Arroyo willow	36-inch box	Yes; nesting, cover, seed
<i>Sequoia sempervirens</i>	Coast redwood	24-inch box	Yes, nesting, cover, seed

**Table 4-5 List and Size of Plants Proposed in Low-Water Plantings**

<b>Plant Species</b>	<b>Common Name</b>	<b>Size</b>	<b>Native Locally/Value</b>
<i>Arctostaphylos manzanita</i> 'emerald carpet'	Carpet manzanita	1 gal	cultivar
<i>Arctostaphylos manzanita</i> 'Dr. Hurd'	Dr. Hurd manzanita	5 gal	cultivar
<i>Arctostaphylos pilosula</i>	La Panza manzanita	5 gal	California native, not locally; nectar, cover
<i>Baccharis pilularis</i>	Coyote brush	5 gal	Yes; late summer nectar
<i>Carex divulsa</i>	Berkeley sedge	5 gal	No
<i>Ceanothus</i> 'blue lolita'	California lilac	1 gal	Cultivar; nectar, cover
<i>Ceanothus hearstiorum</i>	Hearst Ranch buckbrush	1 gal	No; nectar source
<i>Chondropetalum tectorium</i>	Small cape rush	5 gal	No
<i>Cornus sericea</i>	Redtwig dogwood	15 gal	Yes; nectar, cover
<i>Erigeron</i> 'Wayne Roderick'	Wayne Roderick daisy	5 gal	Cultivar; nectar
<i>Festuca californica</i>	California fescue	1 gal	Yes; seeds
<i>Heuchera</i> spp.	Coral bells	5 gal	Yes; nectar



<i>Iris douglasiana</i>	Douglas iris	1 gal	Yes; nectar
<i>Juncus patens</i>	Common rush	5 gal	Yes; seeds
<i>Lavandula</i> spp.	lavender	1 gal	No; nectar source
<i>Leymus condensatus</i> ‘Canyon Prince’	Canyon prince wild rye	5 gal	Cultivar; locally native
<i>Lupinus albifrons</i>	Silver bush lupine	5 gal	Yes; butterfly host plant, nectar
<i>Mahonia repens</i>	Creeping mahonia	1 gal	No; cover, nectar, berries
<i>Mimulus aurantiacus</i>	Sticky monkey flower	5 gal	Yes; nectar
<i>Monardella villosa</i>	Coyote mint	5 gal	Yes; nectar
<i>Pennisetum orientale</i>	Chinese fountain grass	5 gal	No
<i>Penstemon heterophyllus</i> ‘Margarita Bop’	Blue bedder	1 gal	Cultivar; not locally native; nectar source
<i>Polystichum munitum</i>	California sword fern	1 gal	Yes
<i>Rhamnus californica</i> ‘mound San Bruno’	coffeeberry	5 gal	Yes; cover, nectar, berries
<i>Ribes malvaceum</i>	Chaparral currant	5 gal	Yes; nectar, berries
<i>Ribes sanguineum</i>	Red-flowering currant	5 gal	Yes; nectar, berries
<i>Salvia clevelandii</i>	California blue sage	1 gal	Not locally native, nectar
<i>Zauschneria californica</i>	California fuschia	1 gal	Yes; nectar

Project impacts will be ***less than significant with mitigation*** with the implementation of mitigation measures BIO-7 *Habitat Mitigation and Monitoring Plan* and BIO-10 *Riparian Restoration Plan*.

#### 4.4 CUMULATIVE IMPACTS

The cumulative context to assess project impacts includes development within the Cordilleras watershed and in the vicinity of the project site. The watershed is used as the geographic unit for cumulative analysis based on the concept that cumulative biological impacts for this project are best addressed at the watershed level. Much of the lower portion of the Cordilleras watershed is already heavily- to moderately-urbanized, while most of the upper portion of the watershed is park and open space unlikely to experience any significant development. The lower portion is continually impacted by creek bank stabilization projects that may have a cumulative impact on the creek, although each project is subject to federal and state permits that require mitigation. The Cordilleras Health System Replacement Project has a small impact on the creek (0.1 acre), that will be mitigated onsite. Therefore, the project would not result in significant cumulative impacts on the creek itself.

This project essentially redevelops an existing site, and although it will impact oak woodland and creek habitats, it also includes a landscape plan that will restore native habitats, increase plant diversity and nectar and forage opportunities for insects, birds, and reptiles (such as western fence lizard and northern alligator lizard), which tend to support the food web and benefit mammals that may not frequent a developed site. Because the landscape plan does not mitigate

habitat loss at a 1:1 ratio, Mitigation Measure BIO-6 requires a Habitat Mitigation and Management Plan that would incorporate off-site measures in Edgewood Park and Natural Preserve, and potentially at Pulgas Ridge Open Space Preserve that will benefit species within the watershed.

As a result, cumulative impacts are *less than significant with mitigation incorporated*.

## 4.5 MITIGATION MEASURES

**Impact BIO-1:** Construction activities could impact sensitive habitat in adjacent areas.

**Mitigation Measure BIO-1:** *Worker Education and Installation of Environmentally Sensitive Habitat Fencing.*

**Measure BIO-1a:** A biologist knowledgeable about site habitats, species and mitigation requirements shall provide environmental training to construction workers prior to the start of vegetation removal in Phase 1, prior to foundation construction in Phase 2, and prior to landscape installation in Phase 3-4. The training will include:

- a brief presentation to explain biological resources concerns to contractors, their employees, and any other personnel involved in project construction
- a description of relevant special-status species, nesting birds, and bats along with their habitat needs as they pertain to the project;
- a report of the occurrence of these species in the project vicinity, as applicable;
- an explanation of the status of these species and their protection under the federal and state regulations;
- a list of measures being taken to reduce potential impacts to natural resources during project construction and implementation; and
- instructions if a special-status species is found onsite.

A fact sheet conveying this information will be prepared suitable for posting and distribution to the above-mentioned people and anyone else who may enter the construction area. Upon completion of training, employees will sign a form stating that they attended the training and agree to all the conservation and protection measures.

The worker education program shall be repeated as necessary when new construction crews initiate work at the site.

**Measure BIO-1b:** Environmentally sensitive habitat outside of the construction zone shall be demarcated with orange plastic fencing in the field under the guidance of a biologist familiar with the habitats after the initial worker training and before site work, including grading, grubbing, vegetation removal, fence installation, etc.

**Effectiveness:** *These measures will identify environmental sensitive areas onsite and increase worker awareness of environmental sensitive areas.*

**Implementation:** *San Mateo County or its Contractor.*

**Timing:** *Prior to the start of onsite activities that have the potential to impact vegetation.*

**Monitoring:** *The biologist shall provide a copy of the sign in sheets for PDU files. The contractor shall prepare an as-built drawing of the environmentally sensitive area fencing.*

**Impact BIO-2:** Vegetation management in the Wildland Urban Interface could impact special-status San Francisco collinsia and oak-bay woodland, a sensitive natural community.

**Mitigation Measure BIO-2:** *Defensible Space Management Plan.* Prepare a defensible space management plan. The plan shall include protection measures for San Francisco collinsia, and oak-bay woodland. It shall include a requirement to survey and map the current location of San Francisco collinsia within and adjacent to the defensible space management area. The survey shall be conducted during the bloom period, and prior to vegetation management activities. The management plan shall identify protection measures such as temporary fencing during vegetation management activities and training to the workers conducting vegetation management. Remove the fencing once vegetation management is complete so that the ecology of the plant is not disrupted. Plant locations shall be mapped with GPS or other method that allows them to be found again the following year; however, every survey shall include transects (straight or wandering) through the defensible space to find each San Francisco collinsia plant.

**Effectiveness:** *Will protect San Francisco collinsia and oak-bay woodland within the defensible space area from potential impacts caused by vegetation management.*

**Implementation:** *Prepare a defensible space management plan and incorporate this requirement into it.*

**Timing:** *Surveys should be conducted during the bloom period, which may differ in the future. Currently the bloom period is March through May.*

**Monitoring:** *Brief annual reports of the results of the survey shall be prepared. Survey requirements shall be included in a defensible space management plan.*

**Impact BIO-3:** Although there is a low likelihood of occurrence, project construction could impact special-status amphibian and reptile species.

**Mitigation Measure BIO-3:** *Pre-construction surveys for Special-status Amphibian and Reptile Species.* A qualified biologist shall conduct pre-construction surveys for special-status amphibian and reptile species immediately before initiation of any vegetation removal or ground disturbing activities in Phase 1. This survey will be conducted prior to all new ground disturbing work if ground disturbance is phased. When landscaping is being installed during phases 3 and 4 a biologist shall make a morning sweep to inspect for species as noted in measure BIO-9.

Surveys will include walking transects through the project disturbance area and a 100-foot buffer to detect species presence. If species are detected, then a wildlife exclusion fence (such as Ertec) shall be installed to prevent species from entering the site, and it shall be fitted with exit funnels so any species in the project work area can escape. If species are detected the project site shall be monitored regularly in a schedule determined by the biologist in consultation with the US Fish and Wildlife Service and/or California Department of Fish and Wildlife, depending on the species.

If special-status amphibian or reptile species are found during the surveys work shall be stopped in that area and the appropriate wildlife agency shall be contacted for direction. The species will

be left alone and allowed to move out of the area unless the wildlife agencies specifically allow its removal to a safer location.

**Effectiveness:** *These measures would minimize impacts on special-status reptile and amphibian species by assuring they are not in the project footprint when construction starts.*

**Implementation:** *San Mateo County or its Contractor.*

**Timing:** *Prior to the start of onsite activities, and periodically as needed.*

**Monitoring:** *The biologist shall prepare a written record of survey results and any follow up that was required.*

**Impact BIO-4:** Stick houses of San Francisco dusky-footed woodrat could be damaged by construction activities.

**Mitigation Measure BIO-4.** San Francisco Dusky-footed Woodrat Protection Measures. This measure is divided into part a) pre-construction survey and part b) protection or relocation of woodrat houses.

**Measure BIO-4a.** *Pre-construction survey for Woodrat Houses within and adjacent to the grading footprint.* Within 30 days prior to the start of construction activities, a qualified biologist will map all San Francisco dusky-footed woodrat houses within a 25-foot buffer around the project footprint. The environmentally sensitive habitat fencing required in Measure BIO-1 will be placed to protect the houses with a minimum 25-foot buffer. If a 25-foot buffer is not feasible, a smaller buffer may be allowable based on advice from a qualified biologist with knowledge of woodrat ecology and behavior, or Measure BIO-3b may be implemented.

**Measure BIO-4b.** *Relocation of woodrat houses.* Woodrat houses that require relocation will be assessed for obvious signs of current occupation, other house locations within 200 feet, and possible relocation sites. If the house is clearly unoccupied, plans will be made to dismantle it onto a tarp and move it to another location within 200 feet. If there is any doubt about occupancy, plans will be made to relocate the rats and house to a location within 200 feet of the existing location using live trapping, dismantling, reconstruction, and repopulating techniques outside of the breeding season. This type of relocation is limited to late summer months of July and August.

**Effectiveness:** *These measures would minimize long-term impacts on San Francisco dusky-footed woodrat.*

**Implementation:** *San Mateo County or its Contractor.*

**Timing:** *Pre-construction survey no more than 30 days in advance of the start of construction.*

**Monitoring:** *The biologist shall prepare a written record of survey results and relocation if implemented.*

**Impact BIO-5:** Project construction activities during the nesting bird season (February 1-September 15) could result in the violation of state and federal laws protecting nesting birds if they are present in the trees and shrubs to be removed or in the adjacent area.

**Mitigation Measure BIO-5a:** *Nesting Bird Survey.* To avoid impacts to nesting birds and violation of state and federal laws pertaining to birds, all construction-related activities (including but not limited to mobilization and staging, clearing, grubbing, vegetation removal, fence installation, demolition, and grading) should occur outside the avian nesting season

(generally prior to February 1 or after September 15). If construction and construction noise occurs within the avian nesting season, all suitable habitats located within the project's area of disturbance including staging and storage areas plus a 250-foot buffer (passerines), 500-foot buffer (small raptors, such as accipiters), and 1,000-foot buffer (large raptors, such as buteos) around these areas shall be thoroughly surveyed, as feasible, for the presence of active nests by a qualified biologist no more than ten days before commencement of any site disturbance activities and equipment mobilization in Phase 1. If project activities are delayed by more than five days, an additional nesting bird survey shall be performed.

Active nesting is present if a bird is sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys shall be documented. If it is determined that birds are actively nesting within the survey area, Mitigation Measure BIO-4b shall apply. Conversely, if the survey area is found to be absent of nesting birds, Mitigation Measure BIO-4b is not required.

**Mitigation Measure BIO-5b: Nesting Bird Protection.** If pre-construction nesting bird surveys result in the discovery of active nests, no site disturbance or mobilization of heavy equipment (including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, fence installation, demolition, and grading), shall take place within 250 feet of non-raptor nests, 500-feet of small raptor nests, and 1,000 feet of large raptor nests, or a distance determined by a qualified biologist in consultation with CDFW, until the chicks have fledged. Monitoring shall be required to ensure compliance with the MBTA and relevant California Fish and Game Code requirements. Monitoring dates and findings shall be documented.

**Effectiveness:** *These measures would minimize impacts on bird species.*

**Implementation:** *San Mateo County or its Contractor.*

**Timing:** *February 1 through September 15, no more than five days in advance of the start of project construction.*

**Monitoring:** *The biologist shall prepare a written record of survey results and implementation of any avoidance/minimization measures to be kept on file at the San Mateo County Manager's Office, Project Development Unit office. The biologist shall monitor any active nests to determine when young have matured sufficiently to have fledged.*

**Impact BIO-6:** Tree removal and/or demolition of the existing buildings could result in the removal or disturbance of bat roost habitat and may result in significant impacts to bat populations if an occupied or perennial (but unoccupied) maternity or colony roost is disturbed or removed.

**Mitigation Measure BIO-6a Bat Pre-construction Survey:** To avoid impacting breeding, roosting, or hibernating bats protected by California Fish and Game Code, pre-construction surveys of potential bat roost habitat for evidence of maternal or colony bat roosts (e.g., guano accumulation, acoustic, or visual detections) will be performed in all trees and buildings subject to removal or demolition and within a 50-foot buffer within 48 hours prior to project disturbance. Potential sites can be identified and checked in advance but should be re-checked within the 48-hour window.

**Mitigation Measure BIO-6b: Bat Protection.** If an occupied maternity or colony roost is detected or evidence of bat occupancy is found, CDFW will be consulted to determine the appropriate mitigation measures, which may include exclusion prior to removal if the roost

cannot be avoided, a buffer zone, seasonal restrictions on construction work, and/or construction noise reduction measures.

**Effectiveness:** *These measures would minimize impacts on bat species.*

**Implementation:** *San Mateo County or its Contractor.*

**Timing:** *Year-round, no more than 48 hours in advance of the start of project construction.*

**Monitoring:** *The biologist shall prepare a written record of survey results and implementation of any avoidance/minimization measures to be kept on file at the San Mateo County Manager's Office, Project Development Unit office. The biologist shall coordinate with CDFW to determine the appropriate mitigation and monitoring if a roost is found.*

**Impact BIO-7:** The project will result in a net removal of approximately 0.5 acre of native habitat.

**Mitigation Measure BIO-7:** A Habitat Mitigation and Monitoring Plan (HMMP) shall be prepared and implemented to replace the habitats removed at a minimum 1:1 ratio and restore or enhance biological functions and values in the watershed within five years, including primarily at the project site, but also in other areas in the watershed suitable for restoration or enhancement. The HMMP shall incorporate the proposed landscape plan and specify the methods to restore native habitat in areas around the perimeter of the project that are temporarily impacted during construction. It shall include monitoring and performance standards for plantings around the downstream outfall required under mitigation measure BIO-10. It shall include oak woodland restoration onsite wherever feasible. It shall also include off-site restoration within or adjacent to the watershed, including at Edgewood Park and Natural Preserve, and Pulgas Ridge Open Space Preserve nearby. San Mateo County Parks has identified possible actions in Edgewood Park and Natural Preserve (N. Calderon, San Mateo County Parks Department, personal communication). Pulgas Ridge Open Space Preserve adjoins the Cordilleras project site and also has restoration opportunities (K. Lenington, Midpeninsula Regional Open Space District, personal communication).

The HMMP will address both on and off-site mitigation. It shall:

- identify the responsible parties;
- describe project impacts to habitat types and functions and values;
- set goals and performance standards for replacement of habitat types and functions and values impacted by the project;
- set goals and performance standards for the control of invasive weeds with a California Invasive Plant Council Inventory rating of moderate or high;
- provide a detailed implementation plan, including a schedule for completing and monitoring the restoration, financial assurances, a planting/restoration plan, an irrigation plan if appropriate, and maintenance requirements;
- specify monitoring requirements and a minimum monitoring period of five years, with annual reports; and
- identify contingency and adaptive management measures if restoration is not meeting performance standards.

The HMMP is required to be included permit applications to the Regional Water Quality Control Board, California Department of Fish and Wildlife, and US Army Corps of Engineers. Permit requirements related to the HMMP shall be implemented.

**Effectiveness:** *The HMMP is a multi-year process, including remediation measures, to assure that impacts to the native habitats on site are mitigated.*

**Implementation:** *San Mateo County or its Contractor.*

**Timing:** *The HMMP shall be prepared in the final design stage and prior to the issuance of bid documents. Specifications reflecting the HMMP shall be included in the bid package/project specifications, as appropriate.*

**Monitoring:** *An annual report documenting the progress of the HMMP shall be prepared by a biologist/restoration ecologist for a minimum of five years and provided to the San Mateo County Manager's office PDU.*

**Impact BIO-8:** Construction could inadvertently impact trees close to the grading footprint, but not slated for removal, due to impacts within the tree dripline.

**Mitigation Measure BIO-8: Tree Protection Plan.** A tree protection plan shall be prepared by a qualified professional (forester, arborist, landscape architect, or restoration ecologist) to identify protection measures for all preserved trees adjacent to the development footprint which could be impact by construction activity. The tree protection plan shall be included in the project specifications and/or bid documents and shall be implemented prior to the start of construction. It can be phased if construction impacts are phased.

**Effectiveness:** *These measures would minimize impacts on trees outside of the grading footprint.*

**Implementation:** *San Mateo County or its Contractor.*

**Timing:** *Any time prior to site construction activities that may impact tree root zones.*

**Monitoring:** *The qualified professional shall prepare a written record of survey results and implementation*

**Impact BIO-9:** Daily construction practices may entrap wildlife.

**Mitigation Measure BIO-9: Housekeeping Measures to Protect Wildlife.** The following measures shall be followed:

- Monofilament plastic netting, including in temporary and permanent erosion control measures (such as straw wattles) shall not be used.
- All holes greater than 2 feet deep shall be covered overnight to prevent the entrapment of wildlife. Where holes or trenches cannot be covered, each one shall be inspected daily, shortly before work starts, for trapped wildlife, and the wildlife identified and removed by a qualified biologist. Where feasible, materials shall be designed and positioned in trenches such that entrapped wildlife can escape. This may include ramps, jute netting, or similar methods.
- Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals.
- Any pipes or similar structures stored in the project site overnight shall be inspected before they are subsequently moved, capped and/or buried. Entrapped animals shall be identified and removed by a biologist. Special-status species shall be relocated by a

biologist with the appropriate scientific collecting permit or authorization under the appropriate wildlife agency.

**Effectiveness:** *These measures would minimize impacts on wildlife species, including special-status species.*

**Implementation:** *San Mateo County or its Contractor.*

**Timing:** *As part of daily construction practices.*

**Monitoring:** *The information will be included in the worker education handout. The biologist shall prepare a written record of wildlife that has been relocated during the project construction period.*

**Impact BIO-10:** The outfall area downstream of the project does not include restoration planting.

**Mitigation Measure BIO-10: Riparian Restoration Plan.** A detailed mitigation planting plan to restore oak woodland or riparian species in this location shall be developed for the outfall. The replanting plan shall be incorporated into the HMMP developed under Mitigation Measure BIO-7.

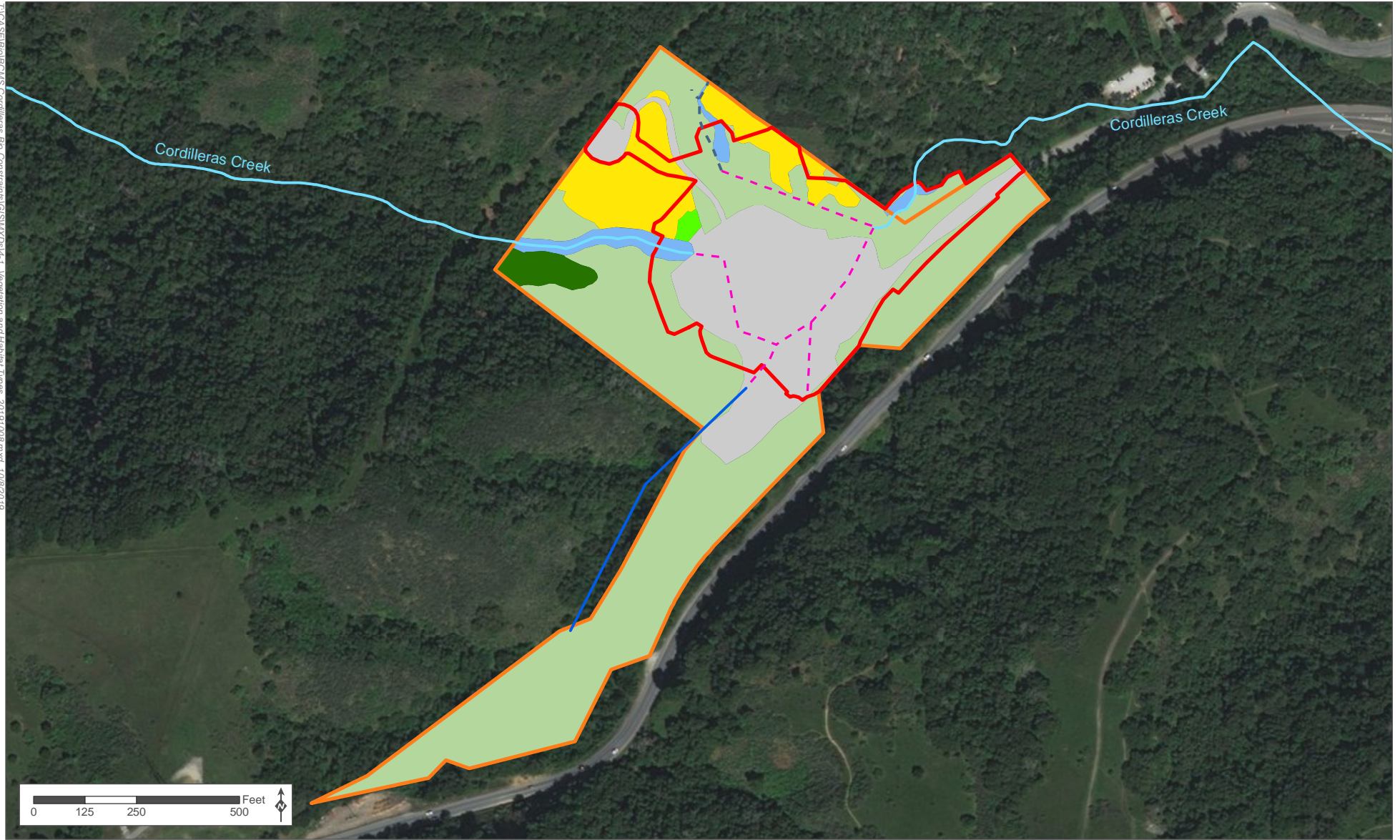
**Effectiveness:** *Assures that restoration occurs in the construction area of the outfall.*

**Implementation:** *San Mateo County or its Contractor.*

**Timing:** *Prior to outfall construction.*

**Monitoring:** *See Mitigation Measure BIO-7.*





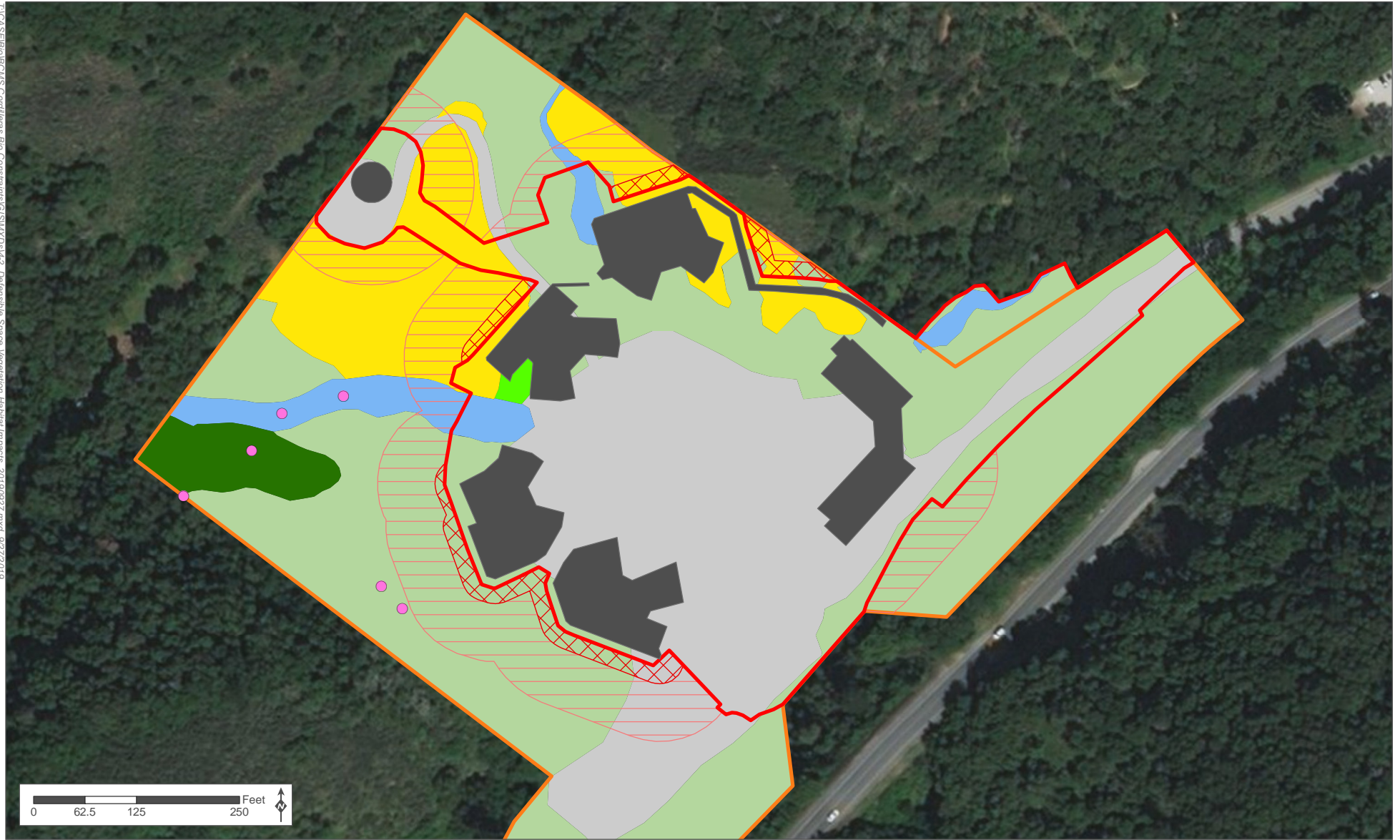
Source: ESRI 2017; San Mateo County 2015; MIG 2019

- - - Ephemeral stream
- - - Underground culvert (approximate route)
- Intermittent stream
- Cordilleras Creek
- Project boundary
- Property boundary
- Annual grassland - 0.075 acres
- Coast Live Oak - Ca. Bay laurel association - 0.38 acres
- Mixed live oak woodland - 11.714 acres
- California sagebrush scrub - 2.058 acres
- Developed - 4.817 acres
- Jurisdictional waters 0.575 acres

**Figure 4-1 Vegetation and Habitat Types**

*Cordilleras Mental Health Center*





Source: ESRI 2017; San Mateo County 2015; MIG 2019

- |   |  |
|---|--|
| <span style="color: pink;">●</span> San Francisco collinsia                           | <span style="background-color: lightgreen;">■</span> Annual grassland              |
| <span style="background-color: grey;">■</span> Structure Extent                       | <span style="background-color: darkgreen;">■</span> Riparian woodland (Bay laurel) |
| <span style="border: 2px solid red;">□</span> Project boundary / Limit of disturbance | <span style="background-color: mediumseagreen;">■</span> Mixed live oak woodland   |
| <span style="border: 2px dashed red;">□</span> 30' Fire Zone                          | <span style="background-color: yellow;">■</span> California sagebrush scrub        |
| <span style="border: 2px solid red;">□</span> 100' Fire Zone                          | <span style="background-color: grey;">■</span> Developed                           |
| <span style="border: 2px solid orange;">□</span> Property boundary                    | <span style="background-color: lightblue;">■</span> Jurisdictional waters          |

**Figure 4-2 Impacts to Habitats in Fire Defensible Zones**

## CHAPTER 5 CLIMATE CHANGE / ENERGY

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### 5.1 REGULATORY SETTING

Agencies at the international, national, statewide, and local levels are considering or have already adopted strategies to control emissions of gases that contribute to global climate change. The agencies described below work jointly, as well as individually, to address climate change through legislation, regulations, planning, policy-making, education, and implementation programs.

#### 5.1.1 U.S. EPA GHG Tailoring Rule and GHG Reporting System

On December 7, 2009, the United States Environmental Protection Agency (U.S. EPA) issued an endangerment finding that current and projected concentrations of the six Kyoto GHGs (carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs)) in the atmosphere threaten the public health and welfare of current and future generations. This finding came in response to the Supreme Court ruling in *Massachusetts v. EPA*, which found that greenhouse gases (GHG) are pollutants under the federal Clean Air Act. As a result, the U.S. EPA issued its GHG Tailoring Rule in 2010, which applies to facilities that have the potential to emit more than 100,000 MTCO<sub>2</sub>e. In 2014, the U.S. Supreme Court issued its decision in *Utility Air Regulatory Group v. EPA* (No. 12-1146), finding that the U.S. EPA may not treat greenhouse gases as an air pollutant for purposes of determining whether a source is a major source required to obtain a permit pursuant to the Clean Air Act's Prevention of Significant Deterioration or Title V operating permit programs. The U.S. EPA's Greenhouse Gas Reporting Program requires facilities that emit 25,000 metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>e) or more of GHG to report their GHG emissions to the U.S. EPA to inform future policy decisions.

#### 5.1.2 Assembly Bill 32 (California Global Warming Solutions Act) and Related GHG Rules

The California Air Resources Board (CARB) is the lead agency for implementing Assembly Bill (AB) 32, the California Global Warming Solutions Act adopted by the Legislature in 2006. AB 32 requires the CARB to prepare a Scoping Plan containing the main strategies that will be used to achieve reductions in GHG emissions in California.

In 2007, CARB approved a statewide 1990 emissions level and corresponding 2020 GHG emissions limit of 427 million metric tons of carbon dioxide equivalents (MTCO<sub>2</sub>e) (CARB 2007). In 2008, CARB adopted its *Climate Change Scoping Plan*, which projects, absent regulation or under a "business as usual" scenario, 2020 statewide GHG emissions levels of 596 million MTCO<sub>2</sub>e and identifies the numerous measures (i.e., mandatory rules and regulations and voluntary measures) that will achieve at least 174 million MTCO<sub>2</sub>e of reductions and reduce statewide GHG emissions to 1990 levels by 2020 (CARB 2009a). In 2011, CARB released a supplement to the 2008 *Scoping Plan Functional Equivalent Document* that included an updated 2020 business as usual statewide GHG emissions level projection of 507 million MTCO<sub>2</sub>e (CARB 2011), and in 2014 CARB adopted its First Update to the Climate Change Scoping Plan (CARB 2014).

Executive Order B-30-15, 2030 Carbon Target and Adaptation, issued by Governor Brown in April 2015, sets a target of reducing GHG emissions by 40 percent below 1990 levels in 2030. By directing state agencies to take measures consistent with their existing authority to reduce

GHG emissions, this order establishes coherence between the 2020 and 2050 GHG reduction goals set by AB 32 and seeks to align California with the scientifically established GHG emissions levels needed to limit global warming below two degrees Celsius.

To reinforce the goals established through Executive Order B-30-15, Governor Brown went on to sign Senate Bill (SB) 32 and AB 197 on September 8, 2016. SB 32 made the GHG reduction target to reduce GHG emissions by 40 percent below 1990 levels by 2030 a requirement as opposed to a goal. AB 197 gives the Legislature additional authority over CARB to ensure the most successful strategies for lowering emissions are implemented, and requires CARB to, “protect the state’s most impacted and disadvantaged communities ...[and] consider the social costs of the emissions of greenhouse gases.”

There are five key goals for reducing GHG emissions in California through 2030: (1) increase renewable electricity to 50 percent; (2) double energy efficiency savings achieved in existing buildings and make heating fuels cleaner; (3) reduce petroleum use in cars and trucks by up to 50 percent; (4) reduce emissions of short-lived climate pollutants, and (5) manage farms, rangelands, forests and wetlands to increasingly store carbon. In addition, the order requires CARB to work closely with other state agencies and the public to update the State’s climate change Scoping Plan. Under the Scoping Plan, approximately 85 percent of the state’s emissions are subject to a cap-and-trade program where covered sectors are placed under a declining emissions cap. Emissions reductions are achieved through regulatory requirements and the option to reduce emissions further or purchase allowances to cover compliance obligations. It is expected that emission reductions from this cap-and-trade program will account for a large portion of the reductions required by AB 32. Although there was initial concern AB 197 may have come at the expense of the Cap-and-Trade Program, AB 398 (approved in July 2017) extended the state’s Cap-and-Trade program through 2030 thereby ensuring the program will continue to assist the state in meeting future GHG reduction goals.

On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan Update (2017 Scoping Plan Update) that is the state’s strategy for achieving California’s 2030 GHG target (CARB 2017). The primary objective of the 2017 Scoping Plan Update is to identify the measures needed to achieve the mid-term GHG reduction target for 2030 (i.e., reduce emissions by 40 percent below 1990 levels by 2030), as established under Executive Order B-30-15 and SB 32. The 2017 Scoping Plan Update identifies an increased need for coordination among state, regional, and local governments to achieve the GHG emissions reductions that can be gained from local land use planning and decisions. It notes emission reduction targets set by more than one hundred local jurisdictions in the state could result in emissions reductions of up to 45 million MTCO<sub>2e</sub> and 83 million MTCO<sub>2e</sub> by 2020 and 2050, respectively. To achieve these goals, the 2017 Scoping Plan Update includes a recommended plan-level efficiency threshold of six metric tons or less per capita by 2030 and no more than two metric tons by 2050.

The major elements of the 2017 Scoping Plan Update framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing zero emission vehicle (ZEV) buses and trucks;
- Low Carbon Fuel Standard, with an increased stringency (18 percent by 2030);
- Implementation of SB 350, which expands the Renewable Portfolio Standard (RPS) to 50 percent and doubles energy efficiency savings by 2030;
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks;

- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing CH<sub>4</sub> and hydrocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030;
- Continued implementation of SB 375;
- Post-2020 Cap-and-Trade Program that includes declining caps;
- 20 percent reduction in GHG emissions from refineries by 2030; and
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

### **5.1.3 CARB Mandatory Reporting of GHG Emissions**

CARB has adopted the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (Title 17, CCR, Section 95100 – 95133 (17 CCR §95100 – 95133)), which requires facilities that emit greater than or equal to 10,000 MTCO<sub>2</sub>e from combustion annually to report their GHG emissions to CARB.

### **5.1.4 Assembly Bill 1493**

With the passage of AB 1493 (Pavley I) in 2002, California launched an innovative and proactive approach for dealing with GHG emissions and climate change at the state level. AB 1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards apply to automobiles and light trucks from 2009 through 2016. Although litigation was filed challenging these regulations and the U.S. EPA initially denied California's related request for a waiver; a waiver has since been granted. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 among light-duty vehicles. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The components of the Advanced Clean Cars program are the Low-Emission Vehicle regulations and the Zero-Emission Vehicle regulation. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards.

### **5.1.5 Senate Bill 375 & Plan Bay Area 2040**

The Sustainable Communities and Climate Protection Act of 2008 (SB 375) was adopted to connect the GHG emissions reductions targets established in the Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce vehicle miles traveled (VMT) and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 regions in California managed by a metropolitan planning organization. On July 18, 2013, the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) adopted Plan Bay Area 2013. The Clean Air Plan includes two main elements: the Sustainable Communities Strategy (SCS) and the Regional Transportation Plan (RTP).

An update to the plan, Plan Bay Area 2040, was jointly approved by the ABAG Executive Board and by MTC on July 26, 2017. As an update to the region's long-range RTP and SCS, Plan Bay Area 2040 projects household and employment growth in the Bay Area over the next 24 years, provides a roadmap for accommodating expected growth, and connects it all to a transportation

investment strategy focused on moving the Bay Area toward key regional goals for the environment (e.g., state GHG reduction goals), economy, and social equity (ABAG/MTC 2017).

Under SB 375, the Clean Air Plan is required to demonstrate that the plan is capable of reducing per capita passenger vehicle and light duty truck CO<sub>2</sub> emissions by seven percent by 2020 and 15 percent by 2035, as compared to the 2005 baseline.<sup>9</sup> Per SB 375, these reductions are required to be demonstrated without taking into account Pavely, low carbon fuel standards, and any other Scoping Plan provisions adopted since 2007 that are expected to further reduce CO<sub>2</sub> emissions and result in a decrease in total CO<sub>2</sub> emissions over time.

Plan Bay Area 2040 identifies Priority Development Areas (PDAs) in nearly 200 locations throughout the Bay Area. PDAs are transit-oriented locations envisioned for infill development.

### **5.1.6 California Green Building Standards Code**

The 2016 California Green Building Standards Code (CALGreen) went into effect on January 1, 2017. The purpose of the addition to the California Building Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings using concepts to reduce negative impacts or produce positive impacts on the environment. The CALGreen regulations cover planning and design, energy efficiency, water efficiency and conservation, material conservation and resources efficiency, and environmental quality. The CALGreen code is typically implemented at the local level and may be augmented by local building standards. The 2016 updates to the CALGreen code address clean air vehicles and increased requirements for electric vehicle charging infrastructure. Additional updates / additions to the code include, but are not limited to, a new universal waste code section and a new section for food waste disposers.

### **5.1.7 Renewable Portfolio Standard**

On April 12, 2011, Governor Brown signed SB X1-2 to increase California's RPS to 33 percent by 2020. SB 350, signed in October 2015, further increased the RPS to 50 percent by 2030.

### **5.1.8 Bay Area Air Quality Management District**

The BAAQMD is the regional agency responsible for air quality regulation within the San Francisco Bay Area Air Basin (SFBAAB). The agency is primarily responsible for assuring that the NAAQS and CAAQS are attained and maintained in the Bay Area. As described in EIR section 5.1.5, the BAAQMD's *Spare the Air-Cool the Climate* 2017 Clean Air Plan focuses on the three following goals:

- Attain all state and national air quality standards;
- Eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants; and
- Reduce Bay Area GHG Emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

The 2017 Clean Air Plan includes 85 distinct control measures to help the region reduce air pollutants and has a long-term strategic vision which forecasts what a clean air Bay Area will look like in the year 2050. The control measures aggressively target the largest source of GHG, ozone pollutants, and particulate matter emissions – transportation. The 2017 Plan includes more

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<sup>9</sup> For 2035, a 15 percent reduction from 2005 levels is the same as an 8.6 percent reduction from 2020 levels.

incentives for electric vehicle infrastructure, off-road electrification projects such as Caltrain and shore power at ports, and reducing emissions from trucks, school buses, marine vessels, locomotives and off-road equipment (BAAQMD 2017a).

### **5.1.9 San Mateo County General Plan: Energy and Climate Change Element**

The San Mateo County General Plan contains an element that identifies goals and policies related to increasing energy efficiency and reducing GHG emissions that contribute to climate change. The following goals and policies are applicable to the proposed project (San Mateo County 2013).

- **Goal 1: Promote and implement policies and programs to reduce county-wide greenhouse gas emissions.**

Policy 1.2: Evaluate the greenhouse gas emissions impacts of developments as part of plan review.

- **Goal 2: Maximize energy efficiency in new and existing development.**

Policy 2.5: Continue implementation of green building standards that exceed state energy efficiency standards.

- **Goal 3: Promote the expansion of the use of renewable energy supplies.**

Policy 3.1: Identify opportunities for new and existing development to incorporate on-site distributed energy resources into project design and construction.

- **Goal 4: Promote and implement policies and programs to reduce vehicle miles traveled by all vehicles traveling in the unincorporated county.**

Policy 4.1: Expand transit-oriented and mixed-use development that reduces reliance on vehicular travel.

Policy 4.2: Promote non-motorized and alternative travel.

- **Goal 6: Promote and implement policies and programs with the goal of achieving zero waste.**

Policy 6.1: Continue to expand recycling and reduce landfilled waste.

- **Goal 8: Promote and implement policies and programs to reduce water use.**

Policy 8.1: Expand infrastructure for monitoring and reusing water.

### **5.1.10 San Mateo County Government Operations Climate Action Plan**

In September 2012, the County of San Mateo, in collaboration with the City/County Association of Governments of San Mateo County, adopted the County of San Mateo Government Operations Climate Action Plan (CAP) (San Mateo County 2012). The CAP identifies a number of strategies to reduce GHG emission resulting from County operations that include, but are not limited to:

- Installing energy efficient street lighting and traffic signals;
- Purchasing energy efficient products;
- Pursuing renewable energy technology;
- Allowing for and promoting alternative work schedules; and

- Diverting of 75 percent of all solid waste by 2020.

Implementation of the strategies contained in the CAP would reduce operational County GHG emissions below the required 15% below 2005 levels by 2020 (i.e., 1990 levels by 2020; the goal set forth in AB 32), and shows progress toward achieving the 2030 reduction goal required under SB 32 (see EIR section 5.1.2).

### **5.1.11 San Mateo County Municipal Green Building Policy**

The 2017 San Mateo County Municipal Green Building Policy elevates the County's standards for sustainable building practices beyond Leadership in Energy and Environmental Design (LEED) certification. Specifically, the policy establishes ambitious energy efficiency targets and sets out to achieve Zero Net Energy<sup>10</sup> for new building construction in order to advance the County's sustainably goals and reduce GHG emissions. The policy stipulates that new construction projects of County-owned buildings over 10,000 square feet are subject to the following requirements:

- 1) LEED Certification – All County-owned new construction projects over 10,000 square feet shall be, at a minimum, LEED certified.
- 2) Energy Efficiency – All County-owned new construction projects over 10,000 square feet, shall achieve at least 50% of available LEED Energy and Atmosphere points.
- 3) Zero Net Energy – All County-owned new construction projects over 10,000 square feet shall achieve zero net energy with generation from on-site or adjacent renewable resources with the following exception:

If a new construction project cannot comply with Zero Net Energy requirements due to site physical limitations or inability to achieve financial feasibility for energy performance and/or renewable energy generation measures, then the project must maximize the amount of energy efficiency and renewable energy generation that meets the financial feasibility requirement.

- 4) Board Discretion – The San Mateo County Board of Supervisors has discretion to exempt a building project from any of the requirements of this policy. The County Office of Sustainability will oversee the exemption process (San Mateo County 2017).

## **5.2 ENVIRONMENTAL SETTING**

### **5.2.1 Greenhouse Gases**

Gases that trap heat in the atmosphere and affect regulation of the earth's temperature are known as GHG. Many chemical compounds found in the earth's atmosphere exhibit the GHG property. GHG allow sunlight to enter the atmosphere freely. When sunlight strikes the earth's surface, it is either absorbed or reflected back toward space. Earth that has absorbed sunlight warms up and emits infrared radiation toward space. GHG absorb this infrared radiation and "trap" the energy in the earth's atmosphere. Entrapment of too much infrared radiation produces an effect commonly referred to as "Global Warming."

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<sup>10</sup> The term "Zero Net Energy" means a building where the amount of energy produced by on-site or adjacent renewable energy resources is equal to the amount of electrical and natural gas energy consumed by the building annually. Achievement is based on 12 consecutive months of actual energy performance data.



GHG that contribute to climate regulation are a different type of pollutant than criteria or hazardous air pollutants, because climate regulation is global in scale, both in terms of causes and effects. Some GHG are emitted to the atmosphere naturally by biological and geological processes such as evaporation (water vapor), aerobic respiration (CO<sub>2</sub>), and off-gassing from low oxygen environments such as swamps or exposed permafrost (CH<sub>4</sub>); however, GHG emissions from human activities such as fuel combustion (e.g., CO<sub>2</sub>) and refrigerants use (e.g., HFCs) significantly contribute to overall GHG concentrations in the atmosphere, climate regulation, and global climate change. Human production of GHG has increased steadily since pre-industrial times (approximately pre-1880) and atmospheric carbon dioxide concentrations have increased from a pre-industrial value of 280 parts per million (ppm) in the early 1800's to 415 ppm in May 2019 (NOAA 2019). The effects of increased GHG concentrations in the atmosphere include climate change (increasing temperature and shifts in precipitation patterns and amounts), reduced ice and snow cover, sea level rise, and acidification of oceans. These effects in turn will impact food and water supplies, infrastructure, ecosystems, and overall public health and welfare.

The 1997 United Nations' Kyoto Protocol international treaty set targets for reductions in emissions of four specific greenhouse gases – CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and SF<sub>6</sub> – and two groups of gases – HFCs and PFCs. These GHG are the primary GHG emitted into the atmosphere by human activities. The six common GHG are described below.

- **Carbon Dioxide (CO<sub>2</sub>).** CO<sub>2</sub> is released to the atmosphere when fossil fuels (oil, gasoline, diesel, natural gas, and coal), solid waste, and wood or wood products are burned.
- **Methane (CH<sub>4</sub>).** CH<sub>4</sub> is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from the decomposition of organic waste in municipal solid waste landfills and the raising of livestock.
- **Nitrous Oxide (N<sub>2</sub>O).** N<sub>2</sub>O is emitted during agricultural and industrial activities, as well as during combustion of solid waste and fossil fuels.
- **Sulfur Hexafluoride (SF<sub>6</sub>).** SF<sub>6</sub> is commonly used as an electrical insulator in high voltage electrical transmission and distribution equipment such as circuit breakers, substations, and transmission switchgear. Releases of SF<sub>6</sub> occur during maintenance and servicing as well as from leaks of electrical equipment.
- **Hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs).** HFCs and PFCs are generated in a variety of industrial processes. Although the amount of these gases emitted into the atmosphere is small in terms of their absolute mass, they are potent agents of climate change due to their high global warming potential.

GHG can remain in the atmosphere long after they are emitted. The potential for a particular greenhouse gas to absorb and trap heat in the atmosphere is considered its global warming potential (GWP). The reference gas for measuring GWP is CO<sub>2</sub>, which has a GWP of one. By comparison, CH<sub>4</sub> has a GWP of 25, which means that one molecule of CH<sub>4</sub> has 25 times the effect on global warming as one molecule of CO<sub>2</sub>. Multiplying the estimated emissions for non-CO<sub>2</sub> GHG by their GWP determines their CO<sub>2</sub>e, which enables a project's combined global warming potential to be expressed in terms of mass CO<sub>2</sub> emissions. The GWPs and estimated atmospheric lifetimes of the common GHG are shown in Table 5-1.

**Table 5-1 Global Warming Potential (GWP) of Common GHG (100 Year Horizon)**

GHG	GWP <sup>(A)</sup>	GHG	GWP <sup>(A)</sup>
Carbon Dioxide (CO <sub>2</sub> )	1	Perfluorocarbons (PFCs)	
Methane (CH <sub>4</sub> )	25	CF <sub>4</sub>	6,500
Nitrous Oxide (N <sub>2</sub> O)	298	C <sub>2</sub> F <sub>6</sub>	9,200
Hydrofluorocarbons (HFCs)		C <sub>4</sub> F <sub>10</sub>	7,000
HFC-23	14,800	C <sub>6</sub> F <sub>14</sub>	7,400
HFC-134a	1,430	Sulfur Hexafluoride (SF <sub>6</sub> )	22,800
HFC-152a	140		
HCFC-22	1,700		
Source: CARB 2014			
A) GWPs are based on the United Nations Intergovernmental Panel on Climate Change (U.N. IPCC) 4 <sup>th</sup> Assessment Report.			

### 5.2.2 State and Regional GHG Emissions Levels

CARB prepares an annual statewide GHG emissions inventory using regional, state, and federal data sources, including facility-specific emissions reports prepared pursuant to the state's Mandatory GHG Reporting Program (see EIR section 5.1.3). The statewide GHG emissions inventory helps CARB track progress towards meeting the state's GHG emissions target of 431 million MTCO<sub>2</sub>e set by AB 32, as well as establish and understand trends in GHG emissions<sup>11</sup>. Statewide GHG emissions for the 2004 – 2015 time period are shown in Table 5-2.

As shown in Table 5-2, statewide GHG emissions have generally decreased over the last decade, with 2015 levels (440 million MTCO<sub>2</sub>e) approximately 10 percent less than 2004 levels (488 million MTCO<sub>2</sub>e). The transportation sector (165 million MTCO<sub>2</sub>e) accounted for more than one-third (approximately 37.5%) of the state's total GHG emissions inventory (440 million MTCO<sub>2</sub>e) in 2015.

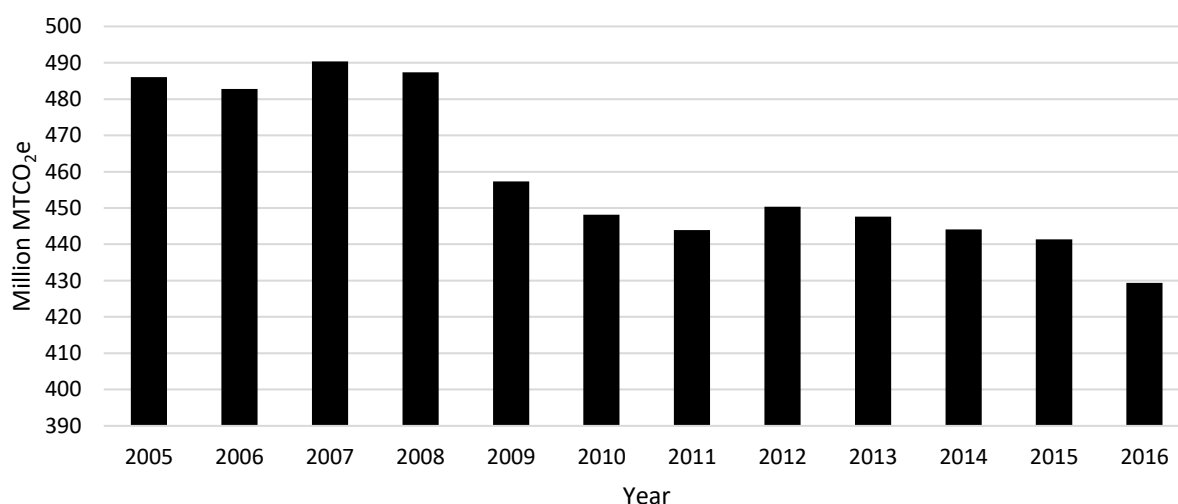
Regionally the BAAQMD estimates emissions from the nine counties that comprise the San Francisco Bay Area Air Basin (see EIR section 3.2.2). Data for the most recent inventory (Year 2011) indicates the Bay Area emitted a total of 86.6 million MTCO<sub>2</sub>e, or approximately 20 percent of the total statewide GHG emissions in Year 2011 (BAAQMD 2015)<sup>12</sup>. Similar to the state inventory, the combustion of fossil fuels in mobile sources such as cars, trucks, locomotives, ships, and boats accounted contribute the most (34.3 million MTCO<sub>2</sub>e) toward regional GHG levels (approximately 40 percent of regional GHG emissions). The BAAQMD's regional GHG inventory identifies that San Mateo County emitted 7.7 million MTCO<sub>2</sub>e in 2011.

<sup>11</sup> CARB approved use of 431 million MTCO<sub>2</sub>e as the state's 2020 GHG emission target in May 2014. Previously, the target had been set at 427 million MTCO<sub>2</sub>e.

<sup>12</sup> The BAAQMD GHG inventory is based on the U.N. IPCC's 2<sup>nd</sup> Assessment Report, which uses different GWP values to compute carbon dioxide equivalents. The GWP values in the 2<sup>nd</sup> Assessment Report are generally lower than the values in the U.N. IPCC 4<sup>th</sup> Assessment Report, which the CARB statewide inventory uses. For example, the GWP of methane was reported as 21 in the 2<sup>nd</sup> Assessment Report and is reported as 25 in the 4<sup>th</sup> Assessment Report.

**Table 5-2 2004-2016 Statewide GHG Emissions (Million MTCO<sub>2</sub>e)**

Scoping Plan Sector	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16
Agriculture	34	35	36	36	33	34	35	36	35	36	34	34
Commercial/Residential	42	43	43	44	44	45	46	43	44	37	38	39
Electric Power	108	105	114	120	101	90	88	95	90	88	84	69
High GWP	9	10	11	12	12	14	15	16	17	18	19	20
Industrial	96	93	90	91	88	91	91	91	94	94	92	90
Recycling and Waste	8	8	8	8	8	8	8	8	9	9	9	9
Transportation	189	189	189	178	170	165	162	161	161	162	166	169
<b>TOTAL MMTCO<sub>2</sub>e<sup>(A)</sup></b>	<b>486</b>	<b>483</b>	<b>490</b>	<b>487</b>	<b>457</b>	<b>448</b>	<b>444</b>	<b>450</b>	<b>448</b>	<b>444</b>	<b>441</b>	<b>429</b>

**2005 - 2016 Statewide GHG Emissions (Million MTCO<sub>2</sub>e)**

Source: CARB 2018

(A) Totals may not equal due to rounding. CARB GHG inventory uses GWPs based on the United Nations' IPCC's 4<sup>th</sup> Assessment Report.

### 5.2.3 County of San Mateo Emissions

In 2010, the latest year of data for which the GHG inventory is available, County government operations resulted in GHG emissions equal to approximately 39,620 MTCO<sub>2</sub>e. The primary source of emissions was from building energy consumption (i.e., natural gas and electricity usage), which resulted in the generation of approximately 15,789 MTCO<sub>2</sub>e (40 percent) of total government emissions. Employees commuting to and from work generated approximately 13,075 MTCO<sub>2</sub>e (i.e., 33 percent) of the inventory, and the other 27 percent of emissions result from the operation of County vehicles used for daily operations (e.g., sheriff cruiser and fire trucks), water and wastewater transport and treatment, solid waste disposal, and public lighting (e.g., streetlights, traffic signals, etc.; San Mateo County 2011a).

## 5.2.4 Existing Project Site GHG Emissions

Operation of the existing CMHC facility contributes to existing city, regional, and statewide GHG emissions. The GHG emissions generated by the existing CMHC facility, presented below in Table 5-3, were estimated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. GHG emissions generated primarily come from area, energy, and mobile sources described in EIR section 3.2.3, as well as the following additional sources specific to GHG emissions:

- **Energy use and consumption:** Emissions generated from purchased electricity and natural gas. As estimated using CalEEMod, the existing CMHC facility on the project site use and consume approximately 493,973 kilowatt-hours (kWh) of electricity per year and 1,021,460 thousand British Thermal Units (kBtu) of natural gas per year.
- **Solid waste disposal:** Emissions generated from the transport and disposal of waste generated by the existing CMHC facility. CalEEMod estimates approximately 107 tons of solid waste are generated per year by the people working and living within the project area.
- **Water/wastewater:** Emissions from electricity used to supply water to the CMHC facility, and treat the resulting wastewater generated. As estimated in CalEEMod, the existing CMHC facility on the project site uses approximately 4.8 million gallons of water per year for outdoor use (e.g., landscaping purposes) and approximately 7.6 million gallons of water per year for indoor use (e.g., bathroom faucets, showers, etc.).

Table 5-3 CMHC Facility Existing GHG Emissions				
Source	GHG Emissions (Metric Tons / Year)			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	Total MTCO <sub>2</sub> e
Area	8.9	<0.0	<0.0	9.3
Energy	198.2	<0.0	<0.0	199.1
Mobile	275.0	0.01	0.0	275.3
Waste	21.7	1.3	0.0	53.7
Water	19.3	0.2	<0.0	27.3
Total Emissions <sup>(A)</sup>	523.1	1.6	<0.0	564.7
Source: MIG 2019 (see Appendix C)				
(A) Totals may not equal due to rounding.				

## 5.2.5 Energy Resources

### 5.2.5.1 State and Regional Energy

Energy use can affect air quality and other natural resources adversely. Energy is primarily categorized in three areas: electricity, natural gas, and fuels used for transportation. According to the United States Energy Information Administration (U.S. EIA), California is the most populous state in the United States, representing 12 percent of the total national population, has the largest economy, and is second only to Texas in total energy consumption. However, California has one

of the lowest per capita energy consumption levels in the United States. This is a result of California's mild climate, extensive efforts to increase energy efficiency, and implementation of alternative technologies. California leads the nation in electricity generation from solar, geothermal, and biomass resources (U.S. EIA 2018).

Total annual energy consumption in the United States as of October 2018 was approximately 83.7 quadrillion Btu (U.S. EIA 2019). Fossil fuels provided approximately 79% of this energy, consisting of petroleum (approximately 30 %), natural gas (approximately 33%), and coal (approximately 16%) resources. Total renewable sources accounted for approximately 12% of energy consumption, and nuclear electric power accounted for approximately 9% of the energy consumed in the United States. In 2016, California was ranked the fourth lowest state in terms of energy use on a per capita basis (199 million Btu per person).

### ***Electricity***

Almost half of California's net electricity generation was from renewable resources, including hydropower, in 2017 (U.S. EIA 2019). In 2017 the California electric system used 292,039 Gigawatt hours (GWh) of electricity, of which 206,336 GWh was produced in-state (CEC 2018a). San Mateo County consumed 4,368 GWh of electricity, about 1.5% of the state's electricity consumption (CEC 2019a). PG&E is the utility provider for the project. In 2017, 33 percent of PG&E's electricity came from renewable resources including solar, wind, geothermal, biomass and small hydroelectric sources, and 78.8 percent of PG&E's total electric power mix is from GHG-free sources including nuclear, large hydro and renewable sources of energy. This meets the State's objective of 33 percent renewable energy by 2020 (PG&E 2017).

### ***Natural Gas***

California accounts for less than one percent of total U.S. natural gas reserves and production; however, almost two-thirds of California households use natural gas for home heating (U.S. EIA 2019). In 2017, California consumed about 25,142 million therms of natural gas<sup>13</sup>. Approximately 18% of natural gas was consumed by the residential sector. San Mateo County consumed approximately 211 million therms of natural gas in the same year, accounting for less than 1% of statewide consumption. The residential sector made up approximately 55% of county-wide consumption (CEC 2019b).

### ***Transportation***

California's transportation sector consumed 79.3 million Btu of energy per capita in 2017, which ranked 32nd in the nation (U.S. EIA 2017). Most gasoline and diesel fuel sold in California for motor vehicles is refined in California to meet state-specific formulations required by CARB.

According to the Board of Equalization (BOE), statewide taxable sales figures indicate a total of 15,584 million gallons of gasoline and 3,124 million gallons of diesel fuel were sold in 2017 (CDTFA 2018). Although exact estimates are not available by County, retail fuel outlet survey data indicates San Mateo County accounted for approximately 2% and 1% of total statewide gasoline and diesel sales, respectively (CEC 2018b).

According to the California Department of Transportation, the annual vehicle miles traveled within all jurisdictions of San Mateo County (state highway and local roadway) is 6,795,953 (Caltrans 2018).

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<sup>13</sup> One therm is equal to approximately 10,000 Btu.

### 5.3 PROJECT IMPACTS

The methodologies and assumptions used in the preparation of this section follow the CEQA Guidelines developed by the BAAQMD, as revised in May 2017. Information on existing GHG emissions levels and potentially applicable federal and state regulations was obtained from the U.S. EPA, CARB, and BAAQMD.

#### 5.3.1 Thresholds of Significance

Based Appendix G of the CEQA Guidelines and the San Mateo County Initial Study Environmental Evaluation Checklist, the proposed project would have a significant climate change or energy impact if it would:

- (a) Generate GHG emissions (including methane), either directly or indirectly, that may have a significant effect on the environment;
- (b) Conflict with an applicable plan (including a local climate action plan), policy, or regulation adopted for the purposes of reducing the emissions of GHG;
- (c) Result in the loss of forest land or conversion of forest land to non-forest use, such that it would release significant amounts of GHG emissions, or significantly reduce GHG sequestering;
- (d) Expose new or existing structures and/or infrastructure (e.g. leach fields) to accelerated coastal cliff/bluff erosion due to rising sea levels;
- (e) Expose people or structures to a significant risk of loss, injury or death involving sea level rise;
- (f) Place structures within an anticipated 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- (g) Place within an anticipated 100-year flood hazard area structures that would impede or redirect flood flows;
- (h) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- (i) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The proposed project would have no or minimal impact with regard to the following thresholds; therefore, these issues are dismissed from further discussion in the sections below:

- Coastal Cliff/Bluff Erosion: The proposed project site is located in the hills west of Redwood City on County-owned land that is developed. It is not located near a coastal cliff/bluff and would not contribute to coastal cliff or bluff accelerated erosion due to sea level rise.
- Sea Level Rise: The proposed project site is approximately 3.4 miles from the San Francisco Bay in the hills west of Redwood City, approximately 300 feet above mean sea level (amsl). The proposed replacement of the existing CMHC building would not expose people or structures to a significant risk of loss, injury or death involving sea level rise.

- **Flood Zones:** The Federal Emergency Management Agency Flood Insurance Rate Map for the project site shows that it is located in Flood Zone X. Areas in Flood Zone X are determined to be outside of the 500-year flood zone and have minimal risk of flooding. The proposed project is not located within an anticipated 100-year flood zone area and would not expose structures or people to flood hazards or impeded or redirect flood flows.

### ***BAAQMD Significance Thresholds***

In May 2017, the BAAQMD published a new version of the CEQA Air Quality Guidelines, which includes revisions made to address the Supreme Court's decision on the California Building Industry Association v. BAAQMD. The Guidelines contain the BAAQMD's recommendations to Lead Agencies for evaluating and assessing the significance of a project's potential greenhouse gas impacts (BAAQMD 2017c). The BAAQMD's recommended CEQA thresholds of significance are shown in Table 5-4.

<b>Table 5-4 BAAQMD Thresholds of Significance for GHG Emissions</b>		
<b>Pollutant</b>	<b>BAAQMD Threshold of Significance</b>	
	<b>Construction Emissions</b>	<b>Operational Emissions</b>
GHG – Non-Stationary Source	<i>None</i>	<ul style="list-style-type: none"> <li>• Compliance with Qualified Greenhouse Gas Reduction Strategy; or</li> <li>• 1,100 MTCO<sub>2</sub>e/yr; or</li> <li>• 4.6 MTCO<sub>2</sub>e/SP/yr (residents and employees)</li> </ul>
GHG – Stationary source	<i>None</i>	10,000 MTCO <sub>2</sub> e/yr
Source: BAAQMD 2017b		

The thresholds presented in Table 5-4 were developed by the BAAQMD to address the GHG reductions necessary for the state and region to meet the requirements set under AB 32 (i.e., reduce GHG emissions to 1990 levels by 2020). Since the proposed project is scheduled to become operational in 2023, the thresholds identified in Table 5-4 do not directly address the next GHG reduction target identified under SB 32, which is to reduce GHG emissions to 40 percent of 1990 levels by 2030. At the time of this writing, the BAAQMD has not released updated thresholds or provided guidance to lead agencies for how to address post-2020 emissions.

Therefore, to evaluate the significance of proposed project's GHG emissions, this EIR compares estimated emissions against the 1,100 MTCO<sub>2</sub>e/yr BAAQMD threshold, as well as a project specific GHG reduction goal of 660 MTCO<sub>2</sub>e/yr<sup>14</sup> to meet the state's 2030 reductions required under SB 32. This allows the County to demonstrate compliance with the current BAAQMD GHG threshold, as well as future GHG reduction goals.

<sup>14</sup> The 660 MTCO<sub>2</sub>e/yr goal was developed by taking the 1,100 MTCO<sub>2</sub>e/yr threshold, which was the threshold to reduce emissions back to 1990 level and reducing it by 40 percent (1,100 MTCO<sub>2</sub>e/yr \* (1 - 0.4) = 660 MTCO<sub>2</sub>e/yr). This demonstrates the progress required under SB 32. This linear reduction approach oversimplifies the threshold development process. The County is not adopting nor proposing to use 660 MTCO<sub>2</sub>e as a CEQA GHG threshold for general use; rather, it is only intended for use on this project.

### 5.3.2 Indirect or Direct GHG Emissions

Global climate change is the result of GHG emissions worldwide; individual projects do not generate enough GHG emissions to influence global climate change. Thus, the analysis of GHG emissions is by nature a cumulative analysis focused on whether an individual project's contribution to global climate change is cumulatively considerable.

The proposed project would generate GHG emissions during short-term construction and long-term operational activities. Construction activities would generate GHG emissions primarily from equipment fuel combustion. Construction activities would cease to emit GHG upon completion, unlike operational emissions that would be continuous year after year until the project is decommissioned.

The BAAQMD has not adopted a threshold of significance for construction-related GHG emissions. The BAAQMD's CEQA Air Quality Guidelines do, however, encourage lead agencies to quantify and disclose construction-related GHG emissions, determine the significance of these emissions, and incorporate BMPs to reduce construction-related GHG emissions. Accordingly, construction-related GHG emissions are amortized over the lifetime of the proposed project (presumed to be a minimum of 30 years). This normalizes construction emissions so that they can be grouped with operational emissions and compared to appropriate thresholds, plans, etc.

Once operational, the proposed project would generate emissions of GHG from the area, mobile, and stationary sources described in EIR section 5.2.4, as well as the following additional sources specific to GHG emissions.

- **Energy Use and Consumption.** The proposed project would generate GHG emissions from electricity use, water and wastewater conveyance and treatment, and solid waste generation. The project aims for Zero Net Energy, and as stated previously in Chapter 3, Air Quality, the CalEEMod default electricity energy intensity and natural gas energy intensity was reduced by half. As estimated using CalEEMod, the proposed project would consume approximately 264,430 kWh of electricity annually and 528,192 kBtu of natural gas annually.
- **Water Use and Wastewater Generation.** As estimated in CalEEMod using default values, the proposed project would use approximately 5.0 million gallons of water per year for outdoor use (e.g., landscaping purposes) and approximately 7.9 million gallons of water per year for indoor use (e.g., bathroom faucets, showers, etc.).
- **Solid Waste Generation.** The proposed Cordilleras Health System Replacement project would produce solid waste that requires landfilling. As estimated using CalEEMod, the total solid waste that would be generated by the facility is estimated to be 110 tons per year. This estimate does not reflect the County's waste diversion goal that is to divert 75 percent of waste by 2020 (see EIR section 5.1.10).

GHG emissions from construction and operation of the proposed project were estimated using CalEEMod, Version 2016.3.2. The modeling is based on default data assumptions contained in CalEEMod, with the project-specific modifications described under EIR section 3.3.3, as well as updating the CO<sub>2</sub> intensity to reflect PG&E's progress toward RPS goals.<sup>15</sup>

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<sup>15</sup> The default PG&E CO<sub>2</sub> intensity factor used in CalEEMod is based on the utility provider's renewable energy mix in 2008. Since 2008, PG&E has increased the amount of electricity sourced from renewable sources to stay



The unmitigated emissions presented below in Table 5-5 take into account these changes.

<b>Table 5-5 Unmitigated Project Construction and Operational GHG Emissions</b>				
<b>Source</b>	<b>GHG Emissions (Metric Tons/Year)</b>			
	<b>CO<sub>2</sub></b>	<b>CH<sub>4</sub></b>	<b>N<sub>2</sub>O</b>	<b>Total MTCO<sub>2</sub>e</b>
<b>Construction</b>				
Total Construction GHG	1,750.1	0.4	0.00	1,760.4
30-Year Average	58.3	0.01	0.00	58.7
<b>Operational</b>				
Area	1.5	<0.00	0.00	1.5
Energy	56.5	<0.00	<0.00	56.9
Mobile	256.5	<0.00	0.00	256.7
Stationary	0.2	<0.00	0.00	0.2
Waste	22.4	1.3	0.00	55.5
Water	8.9	0.3	<0.00	17.2
Total Operational GHG	346.0	1.6	<0.00	388.1
<b>Total Project GHG Emissions</b>	<b>404.3</b>	<b>1.6</b>	<b>0.00</b>	<b>446.8</b>
Existing Emissions	523.1	1.6	<0.0	564.7
<b>Net Project GHG Emissions</b>	<b>-118.8</b>	<b>0.0</b>	<b>0.0</b>	<b>-117.9</b>
Adjusted BAAQMD 2030 Goal	--	--	--	660
Exceeds 2030 Goal?	--	--	--	No
Source: MIG 2019, see Appendix C				

As shown in Table 5-5, the proposed project would result in a net decrease of GHG emissions by 117.9 MTCO<sub>2</sub>e/yr. The derived BAAQMD 2030 goal of 660 MTCO<sub>2</sub>e/yr used for this EIR would not be exceeded. As a result, the project GHG emissions would have a *less than significant impact* on the environment.

### 5.3.3 Project Consistency with Applicable GHG Plan, Policy, or Regulation

BAAQMD 2017 Clean Air Plan, Plan Bay Area 2040, and San Mateo County Government Operations CAP are all documents that have been adopted for the purposes of reducing GHG emissions in the San Francisco Bay Area region and the County. As demonstrated below, the proposed project would not conflict with any of these applicable plans.

#### 5.3.3.1 BAAQMD 2017 Clean Air Plan

The proposed project would not conflict with or obstruct implementation of the BAAQMD 2017 Clean Air Plan. The Clean Air Plan includes greenhouse gas emissions from construction,

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consistent with the State's RPS goals. As such, the GHG intensity factors were updated in CalEEMod to reflect the estimated RPS mix for PG&E in 2022.

mobile, and stationary source activities in its emissions inventories and plans for achieving attainment of air quality standards. Eighty-five control strategies are grouped into nine categories: Stationary Source Measures, Transportation Control Measures, Energy Control Measures, Buildings Control Measures, Agriculture Control Measures, Natural and Working Lands Control Measures, Waste Management Control Measures, Water Control Measures, and Super GHG Control Measures. Most of these control strategies do not apply to the proposed project or are implemented at the local and regional level by municipal government and the BAAQMD. Table 5-6 presents the potentially applicable GHG control strategies and project consistency with those measures.

<b>Table 5-6 Project Consistency with BAAQMD 2017 Clean Air Plan</b>	
<b>2017 Clean Air Plan Control Measures</b>	<b>Project Consistency</b>
<b><i>Stationary Source Measures</i></b>	
SS32 – Emergency Backup Generators	Although specific details are not known at this time, the County intends to install an emergency, diesel backup generator for the CMHC replacement facility. Control measure SS32 focuses on the reduction of emissions of diesel PM and black carbon from back-up generators through Draft Rule 11-18. Although still currently in draft form, the proposed project would comply with the Rule upon adoption by the BAAQMD. This control measure would result in reduced health risks to impacted individuals, and in climate protection benefits.
<b><i>Building Control Measures</i></b>	
BL1 – Green Buildings	The proposed Cordilleras Health System Replacement Facility would be, at a minimum, LEED certified. The County is targeting a high-performance design and strives to achieve a Zero Net Energy development. The proposed development would include on-site renewable sources such as photovoltaic (PV) system (i.e., solar panels) on roof tops and/or landscaped area.
WA4 – Recycling and Waste Reduction	The proposed project would comply with the County Government Operations CAP that would requires government operations to divert at least 75 percent of waste by 2020. In addition, any and all construction debris not salvaged for reuse would be sent to a facility specializing in the re-use, recycling, composting, and/or recovery of materials.

As demonstrated in Table 5-6, the proposed project would be consistent with relevant GHG-related control measures identified in the BAAQMD 2017 Clean Air Plan. It would not obstruct or interfere with any measures or strategies adopted for the purposes of reducing the GHG emissions.

### **5.3.3.2 Plan Bay Area 2040**

Upon completion of the proposed CMHC replacement facility, the new structure would feature approximately 121 beds; four more than the existing facility. As described in EIR section 2.2, residents of the unlocked Co-Housing frequently use the bus that stops in front of the building.

To support the extra beds and functions of the new facility, the County anticipates the number of full-time equivalent employees at the site would need to be increased from 89 to 107.

Though the operation of the proposed facility would increase the number of Co-Housing residents, who take the bus or other means of public transportation, and employees, who would commute to and from the site, the proposed project would not conflict with Plan Bay Area 2040 for a number of reasons, including:

- Co-Housing residents wanting to leave the site via motorized vehicular means (e.g., bus) would likely use a bus route and service that has already been established (i.e., SamTrans would not develop a new route to serve the project site)
- The incremental increase in Co-Housing residents associated with the proposed project (i.e., eight residents) would be relatively minor, and would not result in SamTrans needing to increase the number of busses that serve the existing line. As such, increases in VMT from the additional four beds (and transition from MHRC residents to Co-Housing residents) would be negligible.
- Additional, mobile source GHG emission increases associated with the 18 new, full-time equivalent employees would be nominal, particularly in the regional context for which Plan Bay Area 2040 was developed. In addition, these additional mobile source GHG emissions (attributable to increases in VMT) would be offset by the reductions in the energy and area sectors., or use active modes of transportation, and the new employees would be subject to Furthermore, the additional full-time equivalent employees would be subject to Transportation Demand Management (TDM) measures already implemented by the County, which would serve to further reduce VMT and associated GHG emissions. These TDM measures encourage employees to carpool, take transit these measures, too (see EIR section 3.3.2).

As such, the proposed project would not interfere with Plan Bay Area 2040's goal of reducing GHG emissions through VMT reduction.

### **5.3.3.3 San Mateo County Government Operations Climate Action Plan**

The proposed project consists of replacing an existing CMHC facility, with a newer, more energy efficient facility. Since there is already an existing facility at the site, many of the operation strategies identified in the County's Government Operation's CAP are already being implemented (e.g., allowing for and promoting alternative work schedules, waste management activities to divert 75 percent of solid waste, etc.). As such, many of the day-to-day operational characteristics of the project that are implemented with the intent of reducing GHG emissions would continue in the new facility.

Unlike the existing facility however, the proposed facility would be far more energy efficiency, since the proposed structure would be, at a minimum, LEED certified (striving for a Zero Net Energy development) and would include on-site renewable resources such as a PV system. This building design, which is being undertaken in accordance with the County's Municipal Green Building Policy, targets to reduce emissions one of the largest GHG sources associated with project operation (i.e., the energy demand of the building). In addition to having an energy efficient facility, the proposed project may also include non-structure related energy efficiency measures identified in the County's Government Operations CAP (e.g., energy efficient street lighting) that would further reduce energy consumption (and associated GHG emissions) from operation of the proposed project.

Since the proposed project would continue to implement the operational strategies identified in the County's Government Operations CAP, and would replace an existing structure with a newer, more energy efficient one, the project would be consistent with the goals and strategies of the Government Operations CAP. It would not obstruct or interfere with policies or strategies adopted for the purposes of reducing the GHG emissions.

As described above, the proposed project would not conflict with, obstruct, or otherwise interfere with the implementation of the 2017 Clean Air Plan, Plan Bay Area 2040, or the County's Government Operations Climate Action Plan. Accordingly, the project impact on GHG reduction plans would be *less than significant*.

### 5.3.4 Loss or Conversion of Forest Land

The project property is owned by San Mateo County and designated as Resource Management by the County General Plan and Zoning. The project would not result in loss or conversion of forest land. As described in EIR section **Error! Reference source not found.**, the project would result in the loss of 0.96 acres of non-timber oak woodland. The project landscape plan would replace 176 native trees on site as described in EIR section 4.3.6.

As described in Appendix A of the CalEEMod's User Guide, "Planting trees will sequester CO<sub>2</sub> and is considered to result in a one-time carbon-stock change. Trees sequester CO<sub>2</sub> while they are actively growing" (Trinity Consultants 2017; pg. 60). Since most of the trees that would be removed have matured, and more trees would be planted as a result of development activities, the planting of new trees would likely sequester more carbon than the trees proposed for removal. As such, the loss of non-timber oak woodland would not release significant amounts of GHG emissions, or significantly reduce GHG sequestering. The replacement planting of 175 trees on site plus additional off-site planting would have a beneficial effect of new GHG sequestering. Therefore, the tree removal impact on GHG sequestering would be *less than significant*.

### 5.3.5 Energy Demand and Consumption

#### 5.3.5.1 Construction Activities

The Cordilleras Health System Replacement project would include demolition of the existing building, extensive site grading, and construction of multiple smaller buildings and a parking lot. Project construction is anticipated to begin in March 2020 with site preparation. Foundation construction would commence in early 2021, and the existing buildings wouldn't be demolished until April 2022. In totality, project construction is anticipated to last approximately three years. Construction would require the use of heavy-duty construction equipment (e.g. backhoes, excavators, scrapers, loaders, etc.) during most phases of construction, particularly during site preparation and grading. Construction of the proposed project would involve site preparation, grading, foundation construction, building construction, interior construction, architectural coating, and site finishing. Project construction would result in use of gasoline and diesel fuels used to power the workers' vehicles and equipment.

#### 5.3.5.2 Operational Activities

Upon the completion of construction activities, the project would consist of the operation of new a new CMHC facility. Operation of the facility would involve energy usage from mobile sources (e.g., employees commuting to and from work), electricity (used for lighting, charging of potential electric/hybrid cars, and water transport), and natural gas (for heating). The project would include a numerous green building features (e.g., solar panels, conservative water

appliances, etc.) to help achieve LEED certification, at a minimum. Based on estimates generated in CalEEMod, the proposed project is anticipated to consume approximately 264,430 kWh of electricity and 528,192 kBtu, annually. These rates may be lower based on final structure design, since the project is striving for Zero Net Energy.

#### **5.3.5.3 Conflict with Renewable Energy Plans**

The project would be consistent with the current Green Building Energy Codes and would not interfere with the installation of any renewable energy system. Therefore, the project would be consistent with applicable State and local plans for promoting use of renewable energy and energy efficiency.

#### **5.3.5.4 Energy Impact Conclusion**

Energy would be consumed during both project construction, as well as operation. Energy in the form of gasoline and diesel fuel would be required during construction. This energy is a necessary component of construction, and the project would be required to comply with CARB airborne toxics control measures, which reduces idling of heavy-duty off-road equipment to five minutes or less. Adherence to this regulatory requirement would reduce the amount of fuel consumption during construction. The Bay Area is well served by suppliers of gasoline and diesel fuels; the project would not constitute a significant impact for demand on either of these sources of energy.

The proposed project would replace an approximately 67-year-old building with new, energy efficient structures. As such, electricity and natural gas consumption associated with the new facility would be far less than that consumed by the existing one. Although some additional gasoline may be consumed by additional employees as they commute to and from work, it would not be wasteful or inefficient. In addition, standard petroleum consumption would be reduced through the implementation of the County's TDM measures. For these reasons the project impact on energy and energy resources would be *less than significant*.

### **5.4 CUMULATIVE IMPACTS**

As stated above in EIR section 5.3.2, global climate change is the result of GHG emissions worldwide; individual projects do not generate enough GHG emissions to influence global climate change. Thus, the analysis of GHG emissions is by nature a cumulative analysis focused on whether an individual project's contribution to global climate change is cumulatively considerable. As described in EIR section 5.3.2, the proposed project's unmitigated GHG emissions would be below BAAQMD thresholds and in line with future GHG reduction goals. The project's cumulative impact on GHG emissions would be *less than significant*.

The proposed project, as well as other on-going and planned projects in the San Francisco Bay Area, are well supplied by energy resources, including petroleum, electricity, and natural gas. As described under EIR section 5.3.5.4, the proposed project would replace an approximately 67-year-old facility with new energy efficient structures that strive for Zero Net Energy. The project's cumulative impact on energy resources would be *less than significant*.

### **5.5 MITIGATION MEASURES**

No potentially significant impacts were identified; therefore, no mitigation measures are required.

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## CHAPTER 6 GEOLOGY AND SOILS

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### 6.1 REGULATORY SETTING

#### 6.1.1 Federal Uniform Building Code

The federal Uniform Building Code provides seismic design standards that have been established to reduce structural problems that could occur during major earthquakes. In 1998, the code was revised as follows:

Upgrade the level of ground motion used in the seismic design of buildings

Add site amplification factors based on local soil conditions

Improve the way ground motion is applied in detailed design

#### 6.1.2 Alquist-Priolo Earthquake Fault Zoning Act (1972)

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (formerly the Special Studies Zoning Act) regulates development and construction of buildings intended for human occupancy to avoid the hazard of surface fault rupture. In accordance with this law, California Geological Survey (CGS) maps active faults and designates Earthquake Fault Zones along mapped faults. Three basic types of faults exist: active, potentially active, and inactive. Historic- and Holocene-age faults are considered active, Late Quaternary- and Quaternary-age faults are considered potentially active, and pre-Quaternary-age faults are considered inactive. These classifications are qualified by the condition that a fault must be shown to be “sufficiently active” and “well defined” by detailed site-specific geologic explorations to determine that building setbacks should be established. Any project that involves the construction of buildings or structures for human occupancy is subject to review under Alquist-Priolo, and any structures for human occupancy must be located at least 50 feet from any active fault.

#### 6.1.3 California Building Code (2016)

The State of California provides minimum standards for building design through the California Building Code (CBC). The CBC is based on the Uniform Building Code, which is used widely throughout the United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for conditions unique to California. In 2016, a revised version of the CBC took effect.

#### 6.1.4 San Mateo County General Plan

##### 6.1.4.1 Soil Resources Policies

The following policies to prevent soil erosion from the San Mateo County General Plan (San Mateo County 1986), General Plan Policies, Chapter 2. Soil Resources Policies, are relevant to the proposed project:

- 2.1 *Protect and Preserve Soil as a Resource:* Protect and preserve the availability and quality of soil as a resource for its ability to sustain healthy plant, animal, and human life within San Mateo County.
- 2.2 *Minimize Soil Erosion:* Minimize soil erosion through application of appropriate conservation practices.

- 2.9 *Definition of Soil Erosion:* Define soil erosion as the process by which soil is detached and transported by running water, wind, and gravity. Include naturally occurring soil erosion, and that accelerated by human activity.
- 2.17 *Regulate Development to Minimize Soil Erosion and Sedimentation:* Regulate development to minimize soil erosion and sedimentation; including, but not limited to, measures which consider the effects of slope, minimize removal of vegetative cover, ensure stabilization of disturbed areas and protect and enhance natural plant communities and nesting and feeding areas of fish and wildlife.
- 2.23 *Regulate Excavation, Grading, Filling, and Land Clearing Activities Against Accelerated Soil Erosion:* Regulate excavation, grading, filling, and land clearing activities to protect against accelerated soil erosion and sedimentation.
- 2.29 *Promote and Support Soil Erosion Stabilization and Repair Efforts:* Promote and support efforts aimed at stabilization of ongoing soil erosion and repair of erosion caused land scars.
- 2.30 *Emergency Creekside Erosion Control:* Assure timely implementation of emergency creekside erosion control activities.

#### **6.1.4.2 Natural Hazards Policies**

The following policies to minimize the risks from geotechnical hazards from the San Mateo County General Plan (San Mateo County 1986), General Plan Policies, Chapter 15. Natural Hazards Policies, are relevant to the proposed project:

- 15.1 *Minimizing Risks from Natural Hazards:* Minimize the potential risks resulting from natural hazards, including but not limited to, loss of life, injury, damage to property, litigation, high service and maintenance costs, and other social and economic dislocations.
- 15.3 *Incorporate Information on Natural Hazards into Land Use and Development Decisions:* Integrate data on natural hazards into review of land use and development proposals in order to identify hazardous areas, potential constraints to development and/or appropriate mitigation measures.
- 15.4 *Definition of Natural Hazards:* Define natural hazards as conditions of potential danger or risk to life and/or property resulting from acts of nature, man-made alterations to the natural environment that create hazardous conditions, and/or hazardous conditions intrinsic to the natural environment. Natural hazards may include risks or vulnerabilities likely to be caused or exacerbated by climate change.
- 15.5 *Definition of Geotechnical Hazards:* Define geotechnical hazards as: (1) seismic events, including but not limited to earthquakes, earthquake-induced landslides, liquefaction, subsidence, and tidal flooding damage from earthquake-induced tsunamis and seiches; (2) non-seismic unstable conditions, including but not limited to landsliding, cliff retrenchment, erosion, subsidence, soil creep and shrink/swell conditions; and (3) debris flows and debris avalanches.
- 15.8 *Definition of Critical Facilities and Structures:* Define critical facilities and structures as facilities or infrastructure serving or housing many people, including but not limited to hospitals, fire, police and emergency service facilities, water, electricity, natural gas supply, sewage disposal, communications and transportation facilities.



- 15.9 *Designation of Geotechnical Hazard Areas:* Designate as Geotechnical Hazard Areas those areas that meet the definition of geotechnical hazards, including but not limited to:
- a. The areas illustrated on the Natural Hazards map as Alquist-Priolo Special Studies Zones, Tsunami and Seiche Flooding Areas, Coastal Cliff Stability Areas and Areas of High Landslide Susceptibility.
  - b. Any additional area delineated by other investigations, mapped in greater detail, and/or considered to be hazardous by the County Department of Public Works, including but not limited to areas delineated on the Geotechnical Hazards Synthesis maps, maps prepared by U.S.G.S. and other appropriate sources.
- 15.12 *Locating New Development in Areas Which Contain Natural Hazards:*
- a. As precisely as possible, determine the areas of the County where development should be avoided or where additional precautions should be undertaken during review of development proposals due to the presence of natural hazards.
  - b. Give preference to land uses that minimize the number of people exposed to hazards in these areas.
  - c. Determine appropriate densities and development.
  - d. Require detailed analysis of hazard risk and design of appropriate mitigation when development is proposed in these areas, including assessment of hazardous conditions expected to be exacerbated by climate change, such as increased risks of fire, flooding, and sea level rise.
- 15.13 *Abatement of Natural Hazards:*
- a. Inventory and, where feasible, abate, repair, or rehabilitate natural hazard conditions which most directly threaten public health, safety, and property, giving priority to those hazards which directly threaten critical facilities, life and property.
  - b. Where feasible, provide for adaptive reuse rather than demolition of existing facilities.
- 15.14 *Disclosure of Natural Hazards:* Make efforts to inform the public, including potential buyers of property, that a parcel is located in an area of possible natural hazards. Methods to be used include but are not limited to provision of access to County data, pre-application conferences, environmental review, deed restrictions, requirements for site-specific investigations, educational programs, or other appropriate mechanisms.
- 15.15 *Critical Facilities:*
- a. Where practical, avoid the location of new critical facilities in areas which contain significant natural hazards or are likely to contain significant natural hazards due to the impacts of climate change.
  - b. Continue to work with public utilities, school districts, and other agencies supplying critical public services to ensure that they have incorporated structural safety and other measures to be adequately protected from natural hazards for both existing and proposed facilities and are prepared for potential disasters affecting these facilities.
- 15.18 *Determination of Existence of a Geotechnical Hazard:*
- a. When reviewing development proposals, use the Natural Hazards map to determine general areas where geotechnical hazards may be present.
  - b. When the Natural Hazards map does not clearly illustrate the presence or extent of geotechnical hazards, use more detailed maps, including but not limited to the Geotechnical Hazards Synthesis Maps prepared by Leighton and Associates for San Mateo County, geotechnical information maps prepared by the United States Geological

Survey, or any other geotechnical investigation or source of information considered to be valid by the County Department of Public Works.

15.19 *Appropriate Land Uses and Densities in Geotechnical Hazard Areas:*

- a. In rural areas, consider lower density of land uses that minimize the exposure of large numbers of people to significant geotechnical hazards.
- b. In urban areas, consider higher density land uses that are compatible with the surrounding pattern of development to be appropriate if adequate site-specific review of geotechnical hazards has been undertaken and appropriate mitigation measures can feasibly be incorporated into development projects.

15.20 *Review Criteria for Locating Development in Geotechnical Hazard Areas:*

- a. Avoid the siting of structures in areas where they are jeopardized by geotechnical hazards, where their location could potentially increase the geotechnical hazard, or where they could increase the geotechnical hazard to neighboring properties.
- b. Wherever possible, avoid construction in steeply sloping areas (generally above 30%).
- c. Avoid unnecessary construction of roads, trails, and other means of public access into or through geotechnical hazard areas.
- d. In extraordinary circumstances when there are no alternative building sites available, allow development in geotechnically hazardous and/or steeply sloping areas when appropriate structural design measures to ensure safety and reduce hazardous conditions to an acceptable level are incorporated into the project.

15.21 *Requirement for Detailed Geotechnical Investigations:*

- a. In order to more precisely define the scope of the geotechnical hazards, the appropriate locations for structures on a specific site and suitable mitigation measures, require an adequate geotechnical investigation for public or private development proposals located: (1) in an Alquist-Priolo Special Studies Zone, or (2) in any other area of the County where an investigation is deemed necessary by the County Department of Public Works.
- b. In order to minimize economic impacts on applicants for development and avoid duplication of information, use the existing information base when the Department of Public Works or appropriate County agency determines that it is adequate.

15.24 *Incorporate Geotechnical Concerns During Review of Proposals for New Development:*

Incorporate geotechnical concerns into the review of proposals for new development through measures including but not limited to: (1) regulation of land use and limitation of density; (2) siting and design of roads, grading, utilities, improvements and structures; (3) requiring site specific geotechnical investigations where appropriate and conformance to the recommendations of those investigations; (4) conformance to defined hazardous areas design criteria; and (5) conformance with established building code requirements.

15.25 *Support Efforts to Identify and Abate Hazardous Structures:*

- a. Support efforts to inventory and abate structures that are particularly vulnerable to damage or failure during geotechnical disasters.
- b. Encourage repair, rehabilitation, or adaptive reuse of structures requiring abatement, rather than demolition.

## **6.1.5 San Mateo County Excavating, Grading, Filling and Clearing Regulations**

Chapter 8, Division VII of the San Mateo County Ordinance Code is titled Regulations for Excavating, Grading, Filling and Clearing on Lands in Unincorporated San Mateo County. This

ordinance requires a grading permit for activities involving grading (Section 8602.1) and a land clearing permit for removal of vegetation when: (a) The land area to be cleared is 5,000 sq. ft. or greater, within any two-year period except in County Scenic Corridors where vegetation removal is greater than 1,000 sq. ft; (b) Existing slopes are greater than 20 percent; or (c) The land area to be cleared is in any sensitive habitat or buffer zone as identified in the County General Plan (Section 8602.2).

Section 8605.1 of the ordinance requires an Erosion and Sediment Control Plan that conforms to standards as detailed in the Grading Permit Performance Standards Handbook, Section 8605.2 states that standards in the Grading Permit Performance Standards Handbook are to apply to all aspects of the proposed grading and are intended to be operational during all stages of development, and Section 8605.3 requires that geotechnical reports be prepared by a professional geotechnical consultant under the direction of a soils engineer and an engineering geologist in accordance with the current Minimum Standards for Geotechnical Reports and the Grading Permit Performance Standards Handbook.

## **6.2 ENVIRONMENTAL SETTING**

Two previous geotechnical documents were produced in support of this project; an initial feasibility report (Arup 2014) and a project specific geotechnical report based on 2019 schematic design documents, and grading plans (ENGO 2019). Both involved intensive research and field reconnaissance, including boreholes, test pits, etc. The results and findings of both reports are summarized below.

### **6.2.1 Regional Geologic Setting**

The proposed site is located within the Coast Ranges geomorphic province on the San Francisco Peninsula. The Coast Ranges are characterized by a series of northwest-trending valleys and mountain ranges formed due to the interactions of the San Andreas Fault zone. The bedrock in this region has been folded and faulted in a tectonic setting that is experiencing translational and compressional deformations of the earth's crust. The site is situated on the San Francisco Bay structural block located to the east of the San Andreas Fault. The site is located within the Franciscan Complex basement, specifically shear mélange (Unit KJfsr). The San Francisco Bay block sheared rock is the most dominant unit. This unit also contains inclusions of greenstone, graywacke, glaucophane schist and chert. Younger Cenozoic coarse- to fine-grained sedimentary units overlay much of the San Francisco Peninsula.

### **6.2.2 Local Geologic Setting**

#### **6.2.2.1 Site Topography**

The project site is located in the confluence of two valleys roughly orientated west to east that are associated with Cordilleras Creek. Two, steeply-sided valley features to the west merge to form one valley to the east, and the site is bounded to the north and the south by the valley slopes. The site elevations (mean sea level datum) range from approximately 265 feet above sea level, within the lowest portion of the valley, to roughly 450 feet at the crest of the ridgeline to the north (ARUP 2014).

#### **6.2.2.2 Site Soils**

Soils at the site consist of artificial fill, colluvium, and alluvium. These soils are shown to range in thickness from 1 foot to greater than 21.5 feet and are expected to be thickest within the center of the valley. This is partly due to the presence of the historical location of Cordilleras Creek and

where fill has been placed as part of the creek's diversion into a buried culvert. A brief description of the soils is as follows:

**Artificial Fill.** The artificial fill appears to have been predominantly derived from reworked alluvium, colluvium, and local bedrock. The fill occupies the previous creek valleys and thalwegs<sup>16</sup>, is used for road base on various access roads, and also forms discrete mounds within the valley bottoms. Existing artificial fill of variable thickness is present at the site. The existing artificial fill is located within the bounds of the historic drainage channel of Cordilleras Creek. The creek, which ran through the base of the valley, drained to the east towards the San Francisco Bay. The elevation range of the historic creek within the site boundary appears to have been between approximate elevations 270 and 290 feet (msld). As such, artificial fills are anticipated to be up to 30 feet thick within the eastern portion of the site, thinning out to less than 15 feet thick within the western portion of the site. ENGEO do not have documentation of fill placement. Without documentation regarding the manner of placement, type of material used, and degree of compaction, the existing fill should be considered non-engineered. Non-engineered fill can undergo consolidation that results in settlement under additional loads that is difficult to predict (ENGEO 2019).

**Colluvium and Alluvium.** Quaternary alluvium and colluvium are derived from Cordilleras Creek and hillslope processes. Where exposed, the colluvium appears to have been derived from the weathering of the shallow graywacke sandstone and consists of silty sand and angular gravel. Limited exposures of the alluvium indicate the presence of poorly bedded to massive silty sand and gravel. The modern thalweg contains abundant subangular to subrounded cobble-sized clasts<sup>17</sup>, suggesting winnowing of adjacent fluvial deposits coupled with periodic high flow conditions. The modern-day creek channels are incised into older Quaternary deposits ranging from five to ten feet in depth. In the valley floor, within the footprint of the proposed CMHC facility, the alluvial material is considered to be in excess of 20 feet in certain locations.

Based on past borings, the alluvial deposits are reported to a depth in excess of 21.5 feet and are typically described as 'clayey gravel to sandy clay, moist, brown medium stiff/dense grading to stiff/dense with depth'. The proportion of the minor soil constituent varies between the fine-to coarse-grained soil classification from GC (gravelly clay) to CL (lean clay). This description of the variation in the minor soil constituent is consistent with the depositional environment for recent narrow creeks and the USGS geological map.

**Expansive Soils.** Expansive soils shrink and swell as a result of moisture changes. This can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Therefore, construction of at-grade improvements would need to consider the potential impacts of expansive soil. Tests conducted by ENGEO Incorporated (2019) indicated a low to moderate expansion potential.

### 6.2.2.3 Site Bedrock

The geological map by Brabb et al. (1998; as cited by ENGEO 2019) indicates the site is underlain by Franciscan Complex that is in fault contact with the Whiskey Hill Formation. The bedrock material is described as:

- *Franciscan Complex sheared rock (mélange) (KJfsr)*: "Predominantly graywacke, siltstone and shale, substantial portions of which have been sheared, but includes hard

<sup>16</sup>A line connecting the lowest points of successive cross-sections along the course of a valley or river.

<sup>17</sup> A fragment of rock broken off other rocks by physical weathering.

blocks of all other Franciscan rock types. Total thickness of unit is unknown but is probably several tens of meters”.

- *Whiskey Hill Formation (middle and lower Eocene) (Tw)*: “Light gray to buff coarse-grained arkosic sandstone, with light-gray to buff silty claystone, glauconitic sandstone and tuffaceous siltstone. Sandstone beds constitute about 30 percent of map unit. Tuffaceous and silty claystone beds are expansive. Locally, sandstone beds are well cemented with calcite. In places within this map unit, sandstone and claystone beds are chaotically disturbed. The formation is as much as 900 meters thick”.

The visible bedrock outcrops at the site typically occur at protrusions at the base of the valley slopes. The northern valley has more rock exposures, along the access road to the water tank and in the cut behind the watertank.

The rock outcrops encountered during prior field reconnaissance confirmed the presence of Franciscan Complex graywacke sandstone (KJfsr in Brabb et al., 1998 as cited by ENGEO 2019). No bedding was observed, nor were distinct shear zones evident. The sandstone quality ranged from blocky (widely spaced fractures) to closely-spaced and disintegrated, friable sandstone. Several fracture sets were recorded within the few exposures observed during the reconnaissance.

Franciscan Complex *mélange* and sandstone of unit KJfsr were noted in road cuts from Edgewood Road to the east of the site.

The following observations were made about both of the materials:

- Weathered fractured sandstone cut of approximately 70°. A boundary fence at the base of the slope was present. Limited raveling and debris were observed at the base of the slope. No netting or nailing was observed in the slope.
- The *mélange* in the road cut, was sloped to approximately 60°. At the base of the slope, loose debris and cobbles were noted, indicative of slope erosion and raveling.

The contact between the Franciscan Complex *mélange* and Whiskey Hill Formation as mapped by Brabb et al. (1998; as cited by ENGEO 2019) was not identified during the reconnaissance; however, Whiskey Hill (Tw) graywacke sandstone was observed in the valley slopes northeast of the site along Edmonds Road and the sheared sandstone and shale (KJfs) was noted at the junction between Edgewood Road and Edmonds Road.

### 6.2.3 Faulting and Seismicity

The site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone for active faults, and no known faults cross the site. As such, fault rupture risk at the site is considered remote.

Numerous small earthquakes occur every year in the San Francisco Bay Region and larger earthquakes have been recorded and can be expected to occur in the future. There are a number of active and historic faults within the Bay Area. Figure 6-1 Active Faults in the Greater Bay Area shows the approximate locations of active faults within the Greater Bay Area Region. The most common nearby active faults within 25 miles of the site and their estimated maximum earthquake magnitudes are provided in Table 6-1, based on United States Geologic Survey (USGS) 2008 National Seismic Hazard Maps. An active fault is defined by the State Mining and Geology Board as one that has had surface displacement within Holocene time (about the last 11,000 years).

**Table 6-1 Fault Properties of Active Faults within 50 Miles of the Site**

<b>Fault</b>	<b>Distance (Miles)</b>	<b>Location Relative to Site</b>	<b>Estimated Maximum Magnitude</b>
San Andreas	1.2	West	8.1
Monte Vista-Shannon	3.2	South	6.5
San Gregorio	9.9	West	7.5
Hayward-Rodgers Creek	17.5	East	7.3
Calaveras	23.9	East	7.0
Source: ENGEO 2019			

Seismicity refers to the frequency, distribution, and intensity of earthquakes in a specific geographic area. Historical seismicity has been reviewed using the Modified Mercalli Intensity (MMI) scale of 1930. The USGS provides quantitative measurement of earthquake moment magnitude (Mw) and Peak Ground Accelerations (PGA) and relates the qualitative MMI scale to PGA, as shown in Table 6-2.

**Table 6-2 MMI v PGA Empirical Correlation**

<b>Perceived Shaking</b>	Not Felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
<b>Potential Damage</b>	none	none	none	very light	light	moderate	moderate/heavy	heavy	very heavy
<b>Peak Acc. (%g)</b>	<.17	.17-1.4	1.4-3.9	3.9-9.2	9.2-18	18-34	34-65	65-124	>124
<b>Peak Vel. (cm/s)</b>	<0.1	0.1-1.1	1.1-3.4	3.4-8.1	8.1-16	16-31	31-60	60-116	>116
<b>Instrumental Intensity</b>	I	II-III	IV	V	VI	VII	VIII	IX	X
Source: USGS 2003									

### 6.2.3.1 Surface Rupture

Surface rupture occurs when movement on a fault causes an offset in the earth's surface and is addressed in the Alquist Priolo Act of 1972. The Alquist Priolo fault zone maps developed by the CGS delineate the surface location of known active and potentially active fault traces using 7.5-minute quadrangle maps. The CMHC is located within the Woodside quadrangle (ENGEO 2019). Review of this map indicates that there are no known active or potentially active faults crossing the site.

Review of the USGS Quaternary fault map and the USGS geological map of San Mateo quadrangle indicates that no known faults cross through the site (ENGEO 2019). The desk-based review did not indicate the presence of active fault traces intersecting the site. During the site reconnaissance and based on limited exposures, no fault-related geomorphic features were noted.

The majority of the site is steep and rugged and covered with dense vegetation, and culturally modified, all of which greatly reduce the likelihood of preserving evidence of recent surface-fault rupture. The site is located approximately 2 miles to the east of the active San Andreas fault

zone, so there could be a remote possibility of potentially unmapped fault traces within the site vicinity. However, based on an overall review of available published and unpublished information, there is a low risk of fault rupture at the site.

### 6.2.3.2 Historical Ground Shaking

The USGS and CGS have published multiple maps and databases categorizing historical earthquakes. These databases typically include information on epicenter location, earthquake magnitude, causative fault, rupture length and area. These widely available published maps and databases have been reviewed to evaluate the frequency, distribution and intensity of historical earthquakes in relation to the site. Table 6-3 is a selected list of significant earthquakes (>6.0 and MMI Zone Value >III) recorded in the region (ENGEO 2019).

<b>Table 6-3 Selected Historical Earthquakes near CMHC</b>					
<b>Date</b>	<b>Moment Magnitude (Mw)</b>	<b>MMI at the site</b>	<b>Epicenter</b>		<b>Name or Location</b>
			<b>Latitude</b>	<b>Longitude</b>	
1838, June	7.4	VIII	37.3	-122.15	San Francisco to San Juan Bautista
1858, Nov. 26	6.2	VI	37.5	-121.8	San Jose Region
1864, Feb. 26	6.1	V	37.2	-121.6	Southeast of San Jose
1864, Mar. 5	6	V	37.6	-121.855	East of San Francisco Bay
1865, Oct. 8	6.5	VII	37.2	-121.9	Santa Cruz Mountains
1866, Jul. 15	6	II-IV	37.7	-121.5	Western San Joaquin Valley
1868, Oct. 21	7	VII	37.7	-122.1	Hayward Fault
1881, Apr. 10	6.3	V	37.3	-121.3	Western San Joaquin Valley
1889, May 19	6	V	38.1	-121.8	Montezuma Hills
1892, Apr. 19	6.6	V	38.4	-122	Vacaville
1892, Apr. 21	6.4	II-IV	38.5	-121.9	Winters
1898, Mar. 31	6.4	V	38.2	-122.5	Mare Island
1903, Jun. 11	6.1	V	37.2	-121.8	San Jose
1903, Aug. 3	6.2	VI	37.3	-121.8	San Jose
1906, Apr. 18	7.8	VIII	37.7	-122.5	Great 1906 EQ
1911, Jul. 1	6.4		37.25	-121.75	Southeast of San Jose
1984, Apr. 24	6.2		37.3	-121.676	Morgan Hill
1989, Oct. 18	6.9		37.0	-121.877	Loma Prieta
Source: CGS online, 2014					

Review of Table 6-3 indicates that the site has experienced severe shaking in historical time from a number of large earthquakes. The greatest recorded earthquake likely to have affected the site during historical time is the 1906 Great San Francisco earthquake (Mw 7.8).

The existing buildings also would have experienced severe shaking during the 1989 Loma Prieta earthquake. The USGS shakemap of the Loma Prieta earthquake shows that the site experienced an estimated PGA of 0.2g (ENGEO 2019).

In 2007, The Working Group on California Earthquake Probabilities (with the USGS) revised its evaluation of the probabilities of significant earthquake occurrence in the San Francisco Bay Area. The 2007 report concludes there is a 93% probability that at least one magnitude 6.7 or higher earthquake will occur in the region in the following 30 years.

Review of the USGS and CGS databases of historical earthquakes which would have impacted the site, indicates that the site is located within a seismically active area impacted by more than 15 earthquakes Mw>6 with MMI rating >III within the historical record set (ENGEO 2019). Given the frequency of earthquakes Mw>6 with MMI rating >III or higher, within the lifetime of the proposed CMHC facility it is anticipated that the site will experience significant seismic events.

#### **6.2.3.3 Liquefaction**

Review of the liquefaction susceptibility map of San Mateo County indicates there is a moderate to low (0.1 to 1.0%) risk of liquefiable soils being present on the site. More recent and detailed mapping by Witter et al. (2006) map the Cordilleras Creek valley floor as having moderate susceptibility to liquefaction (ENGEO 2019).

According to the project specific geotechnical report (ENGEO 2019), the liquefaction analysis, subsurface stratigraphy, and proposed changes in site grading, was interpreted to show a low risk of surface expression of liquefied material at the site.

#### **6.2.3.4 Dry Sand Settlement**

Dynamic densification settlement of loose granular soils above the groundwater table, also known as dry sand settlement, can cause ground surface settlement with earthquake-induced vibrations. Based on the results of ENGEO analyses (2019), there is an anticipated up to ½ inch of settlement that may occur at the site during a seismic event.

#### **6.2.3.5 Lateral Spreading**

Lateral spreading is a failure within a nearly horizontal soil zone (possibly due to liquefaction) that causes the overlying soil mass to move toward a free face or down a gentle slope. Generally, effects of lateral spreading are most significant at the free face or the crest of a slope and diminish with distance from the slope. Guidelines developed for assessing liquefaction-induced lateral ground displacement consider saturated loose granular soils (ENGEO 2019).

MHRC Buildings C and D are planned in the vicinity of Cordilleras Creek. ENGEO (2019) evaluated the lateral spreading risk considering the banks of the creek. They reviewed subsurface data for Building C and Building D. Based on the review, material above the bottom of creek elevation is predominately clayey soil and is not likely susceptible to lateral spreading. Likewise, based on the liquefaction analysis, material susceptible to liquefaction is predominantly present at depths of 25 or more below existing grade (below creek bottom). Based on the review of subsurface data and the results of the liquefaction analysis, it is considered that the risk of lateral spreading at the site is low.



#### **6.2.4 Slope Stability**

No active landslides are mapped at the location of the site (ENGEO 2019). Based on a review of the USGS map MF-2325-H (Locations of Damaging Landslides in San Mateo County, California, Resulting from 1997-98 El Niño Rainstorms, 1999), no damaging landslides occurred within five miles of the site. USGS map OFR 97-745C (Summary Distribution of Slides and Earth Flows in San Mateo County, California, 1997) indicates that the site is located in an area classified as having few landslides. USGS map I-1257D (Hillside Materials, San Mateo County, California, 1985) shows that slopes across the site vary from 0 to 15 percent near the base of the valley and increase up to 50 percent for the valley hillsides (ENGEO 2019).

Previous site reconnaissance covered only a small portion of accessible topography at the site and did not identify any active slope instabilities, other than the presence of colluvial hollows and a possible landslide located northeast and outside of the site boundary. Evidence of historical slope movement and potential for recurrence of such movement was identified and is described below.

##### **6.2.4.1 Static Landslides**

Examination of available USGS LiDAR and topographic data indicates that much of the site shows evidence of the absence of landslide related geomorphology. Static slope creep is prevalent based on bowed trees and leaning boundary fences. Published geologic maps of the region also do not show any known active landslides within the site boundary (ENGEO 2019).

##### **6.2.4.2 Rainfall-Induced Landslides**

Water in and on a slope is a common agent that can cause erosion and slope instability. For instance, during periods of intense rainfall, coupled with high infiltration rates, water causes pore pressures in slope soils to increase, which can lead to slope failure. Active water seepage was not noted during the site reconnaissance survey (the survey was performed during a severe drought). The existing slope colluvium appears to be shallow, loose and relatively free draining. Surface water runoff can increase the rate of erosion and potentially initiate a debris flow of already loosened material (ENGEO 2019).

##### **6.2.4.3 Seismically-Induced Landslides**

The potential for earthquake-induced land sliding increases when shear strength of slope materials decreases and hydrostatic pressure increases due to stresses developed from seismic shaking. The site reconnaissance revealed that the majority of the slopes are very rocky with a thin soil mantle. Slopes such as these pose a lower threat of seismically-induced slope failure than slopes composed of thicker soils, particularly liquefiable, granular soils (ENGEO 2019).

##### **6.2.4.4 Debris Flow**

The review of the LiDAR data indicated three colluvial hollows (hillside depressions) on the north-facing slope of the ridge within the southwest portion of site. These features were confirmed to be soil-mantled hollows and could be the source for future debris flows. Currently, these hollows have juvenile deciduous trees occupying the surface that provide a degree of slope stability; however, future development of this part of the site could destabilize these features.

Additionally, based on geologic mapping of the debris fan deposit, ENGEO estimates a maximum run out distance of a debris flow would be around 300 feet. Field mapping and the slope map suggest approximately 75 to 150 feet of potential deposition area is located between the base of slope and the proposed structures. Therefore, it is reasonable to assume that some of

the debris will slow and deposit before it reaches the proposed structures; however, some debris will potentially reach the proposed structures prior to deposition.

#### **6.2.4.5 Post Fire Slope Instability**

Vegetation can protect slopes by reducing erosion, strengthening soil, and inhibiting shallow landslides. Water being intercepted and slowed by foliage reduces water available for infiltration and also reduces erosion from runoff. The roots reinforce the soil and increase its shear strength. After fire events, when vegetation has been removed, the exposed slopes are more susceptible to water-induced erosion and dry raveling. Since the site is highly vegetated, the risk for dry raveling and soil erosion would increase greatly after a fire that removes or significantly damages the slope vegetation. Principal debris flow source areas in San Mateo County are shown on USGS Open-File 97-745 E Sheet 7 of 11, however the site is not located in an area containing large flow source areas, as it primarily contains smaller, localized source areas (ENGEO 2019).

#### **6.2.4.6 Summary of Slope Stability Hazard**

Earth movement is a potential hazard at the site. The slope material at the site is loose and free draining, so the hazard of rainfall-induced slope failure appears to be low to moderate. The hazard of localized debris flows being initiated by heavy rainfall coupled with site de-vegetation is moderate to high, but there is a low potential for widespread debris flows across the site. Due to the location of the site in a highly seismic region, the potential for seismically-induced slope failure at the site is moderate, especially for the slopes with thicker soil mantles in the northeastern portion of the site (ENGEO 2019).

#### **6.2.4.7 Rockfall**

Few outcrops were available for detailed inspection and the collection of structural information for a rock mass characterization. The limited bedrock exposures identified four sets of general fracture plane orientations that are suggestive of block rock fall mitigation. However, during the site reconnaissance no large blocks or wedges were identified at the base of the current exposed cut slopes (ENGEO 2019).

Highly fractured material generally results in higher erosion rates and larger talus piles of small sized material at the toe of a slope. Massively bedded material has much lower erosion rates and thus usually a smaller volume of accumulated debris at the base of the slope. The slopes on site appear to be composed partially of talus with a thin soil mantle. Joint spacing of the sandstone encountered during the site reconnaissance varied from 2 feet to closely-spaced in exposures of up to 10 feet wide. A fence that transects the southwestern ridge at the site had a build-up of angular sandstone talus, which indicates that talus production and mobilization has occurred rather recently.

Review of the limited fracture data did not illuminate adverse fracture plane orientations. No fracture planes were identified as clearly day-lighting in slopes currently existing on site. Based on this analysis, wedge failure is a low to moderate risk on site with current slope configurations. However, with the introduction of cut slopes, the potential risk for wedge failure could increase (ENGEO 2019).

## **6.3 PROJECT IMPACTS**

### **6.3.1 Thresholds of Significance**

Based on Appendix G of the CEQA Guidelines and the San Mateo County Initial Study Environmental Evaluation Checklist, the project would have a significant impact to geology and soils if it would:

- (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 and the County Geotechnical Hazards Synthesis Map),
  - ii. Strong seismic ground shaking,
  - iii. Seismic-related ground failure, including liquefaction,
  - iv. Landslides, or
  - v. Coastal cliff/bluff instability or erosion.
- (b) Result in significant soil erosion or the loss of topsoil;
- (c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- (d) Be located on expansive soil, as noted in the 2010 California Building Code, creating significant risks to life or property;
- (e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater, or;
- (f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

The proposed project would have no or minimal impact with regard to the following thresholds; therefore, these issues are dismissed from further discussion in the sections below:

- The project site is not in an Alquist-Priolo Earthquake Fault Zone and no known faults cross the site. Therefore, the proposed project would not result in the rupture of a known earthquake fault.
- The project site is not near a coastal cliff or bluff and the proposed project would be set in a valley at the lowest elevations on the site. Therefore, the project would not cause coastal cliff/bluff instability or erosion.
- The proposed project would not use septic tanks or an alternative wastewater disposal system. Therefore, the project would have no impacts to soils related to the use of septic tanks or alternative wastewater disposal systems.

### **6.3.2 Seismic-Related Impacts**

The project site is located in the San Francisco Bay Area which is considered one of the most seismically active regions in California. Significant earthquakes have occurred in this area and

strong to violent ground-shaking in the project area can be expected as a result of a major earthquake on one of the faults in the region. The proposed project shall be designed and constructed in accordance with the CBC. The project would not create potential for or exacerbate existing conditions related to seismic ground shaking. Compliance with the CBC and by following Mitigation Measure GEO-1 would ensure the new building are safe during seismic events. Seismic ground shaking impacts of the project are ***less than significant with mitigation incorporated.***

The project specific geotechnical report shows a low risk of surface expression of liquefied material at the site. However, design elements were incorporated in the site-specific geotechnical report to protect against impacts from soil liquefaction. Implementation of Mitigation Measure GEO-1 would ensure that impacts from liquefaction are less than significant level. Ground failure impacts related to seismicity are ***less than significant with mitigation incorporated.***

### **6.3.3 Landslides**

No known active landslides are shown on historic maps within the site boundary, although a site walkover did reveal evidence of previous slope instability. ENGEO concluded that some debris on the northern portion of the property above the project development could flow into the north tributary to Cordilleras Creek and flow south potentially reaching two proposed MHRC structures prior to deposition. Deflection berms or walls were recommended by ENGEO as part of project construction to protect the down slope structures from debris flow hazards by both diverting and allowing for accumulation of debris if necessary. The proposed project includes installing a debris catchment system to contain rock and soil from this debris flow (EIR section 2.5.4; Appendix B, Sheets C0704 and C0705). Implementation of Mitigation Measure GEO-1 would ensure project grading does not exacerbate existing site landslide and debris flow potential. Potential landslide impacts are ***less than significant with mitigation incorporated.***

### **6.3.4 Soil Erosion or Loss of Topsoil**

Construction of the proposed project would disturb more than acre of soil and therefore a SWPPP will be prepared as discussed in Chapter 8. The SWPPP would include BMPs to prevent erosion and loss of topsoil during construction. BMPs could include stormwater inlet protection, the use of fiber rolls, protection of soil and materials stockpiles from runoff, and sandbags and earthen berms to prevent runoff water from leaving the site, among other measures during project construction. The project specific geotechnical report recommendations included furnishing and placing a synthetic erosion control mat and/or degradable erosion control blanket for slope face protection and lining of runoff channels (ENGEO 2019). Additionally, hydro-seeding of disturbed areas is recommended in the geotechnical report to allow quick revegetation of slopes, which would help hinder slope erosion following site construction. A preliminary Erosion Control Plan (ECP) has been prepared for the proposed project (Appendix B, Sheets C1301 to C1306, and C1308) as part of the planning process. The ECP details areas and locations where stormwater inlet protection, filter bags, fiber rolls, silt fence, and hydroseed will be used to limit the potential for sediment and other contaminants to enter the storm drain and/or creek channel (EIR section 8.3.4.1).

The implementation of the SWPPP would prevent substantial erosion and loss of topsoil during construction and would protect stormwater runoff water quality. Implementation of the SWPPP is considered by water quality protection regulations sufficient to ensure the project would not exacerbate existing site erosion and soil loss conditions. The project would, therefore, have a less than significant impact on soils and loss of topsoil during project construction. After project

construction is complete, there is no anticipated soil disturbance or potential for erosion that would occur during project operation. Therefore, the potential erosion impact or loss of topsoil would be *less than significant*.

### 6.3.5 Unstable Geologic Unit or Soil

Several of the planned buildings would be situated on transitions between bedrock and engineered fill. Different bearing materials within the footprint of a structure can introduce a variety of differential settlement issues and result in a compromised or damaged building. Recommendations are set out in the project specific geotechnical report to reduce differential settlement impacts to the proposed new structures. The proposed project would not exacerbate existing site differential settlement potential. With implementation of Mitigation Measure GEO-1 potential impacts from unstable geologic unit or soils on the proposed new buildings would be less than significant. Therefore, the potential impacts from unstable soils would be *less than significant with mitigation incorporated*.

### 6.3.6 Expansive Soils

The project site is considered to have a low to moderate potential of being located on expansive soils. The site-specific geotechnical document contains recommendations and design parameters to ensure that the project has suitable foundations to mitigate the existing conditions and ensure the project is not impacted by the underlying geology and soils. The proposed project would not exacerbate existing site soil conditions in regard to expansive soils. With implementation of Mitigation Measure GEO-1, potential impacts from soil expansion on the new buildings would be less than significant. Therefore, the impact would be *less than significant with mitigation incorporated*.

### 6.3.7 Paleontological Resources or Unique Geologic Features

There are no known surface paleontological resources or unique geologic features at the project site. The site is situated on primarily alluvium and colluvium, which are strata unlikely to contain fossilized remains. The grading required for foundational material is anticipated to be up to 50' deep and would cut into the underlying Franciscan Complex bedrock. Vertebrate fossils in the Franciscan Complex are extremely rare, and discovery is not anticipated. Due to the unlikelihood of significant fossil discovery, the project impact to paleontological resources or unique geologic features would be *less than significant*.

## 6.4 CUMULATIVE IMPACTS

Geologic and soils hazards are largely site specific, although San Mateo County in general is subject to potential regional geologic and soils risks. The magnitude of this risk would be dependent on the site-specific conditions present at each future project area. Regardless of the potential risk, each cumulative project would be required to implement design and construction practices intended to reduce and or avoid site-specific geologic and soils risks (either through compliance with general plan policies and local building code, or through the implementation of site specific mitigation measures developed as a result of required site investigations). The project site is in a remote location at the edge of urban development and the surrounding land is owned and controlled by the County or a regional open space district, so cumulative effects from grading and other activities from any future projects are controlled such that cumulative impacts are easily monitorable. Individual design and construction practices would render the site-specific risks posed by local and regional hazards such as ground shaking, liquefaction, and other

soils and geologic-related conditions less than significant for each project and would prevent significant cumulative impacts from occurring.

## 6.5 MITIGATION MEASURES

**Impact GEO-1:** Project construction could be impacted by seismic shaking and expansive soils, could destabilize project soils, and exacerbate potential for erosion, landslides, and soil liquefaction.

**Mitigation Measure GEO-1:** The County shall implement all recommendations identified in the project specific geotechnical report (ENGEO 2019) during the project design and construction phases. Project design shall be consistent with the California Building Code requirements.

**Effectiveness:** *This measure would minimize and/or avoid impacts on geological hazards.*

**Implementation:** *By San Mateo County or its contractor.*

**Timing:** *During the design phase and throughout project construction.*

**Monitoring:** *San Mateo County.*





Source: Microsoft Corporation, 2014; ARUP, June 3, 2014

**Figure 6-1 Active Faults in the Bay Area**  
 Cordilleras Mental Health Center Replacement Project

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## CHAPTER 7 HAZARDS AND HAZARDOUS MATERIALS

### 7.1 REGULATORY SETTING

Hazardous materials encompass a wide range of substances, some of which are naturally-occurring and some of which are man-made. Examples include pesticides, herbicides, petroleum products, metals (e.g., lead, mercury, arsenic), asbestos, and chemical compounds used in manufacturing. Determining if such substances are present on or near project sites is important because exposure to hazardous materials above regulatory thresholds can result in adverse health effects on humans, as well as harm plant and wildlife ecology.

Due to the fact that these substances have properties that are toxic to humans and/or the ecosystem, there are multiple regulatory programs in place that are designed to minimize the chance for unintended releases and/or exposures to occur. Table 7-1 summarizes these regulations.

<b>Table 7-1 Regulation of Hazardous Materials</b>	
<b>Agency</b>	<b>Responsibilities</b>
U.S. Environmental Protection Agency	Oversees Superfund sites; evaluates remediation technologies; develops standards for hazmat disposal & cleanup of contamination; implements Clean Air & Clean Water Acts, including the National Emission Standard for Hazardous Pollutants for Asbestos.
U.S. Department of Transportation	Regulates and oversees the transportation of hazardous materials.
U.S. Occupational Safety & Health Administration	Implements federal regulations and develops protocol regarding the handling of hazmat for the protection of workers.
CA Department of Toxic Substances Control	Authorized by EPA to implement & enforce various federal hazmat laws & regulations; implements state hazmat regulations; oversees remediation of contamination at various sites.
CA Occupational Safety & Health	Implements state regulations and develops protocols regarding the handling of hazmat for the protection of workers.
CA Air Resources Board / Bay Area Air Quality Management District	Regulates emissions of toxic air contaminants & requires public dissemination information regarding the risk of such emissions.
CA Water Resources Control Board / Regional Water Quality Control Board	Regulates the discharge of hazmat to surface and ground waters; oversees remediation of contamination at various sites.
CA Department of Public Health	Regulates abatement of lead-based paint; requires accredited training for workers and supervisors; provides certification of workers and supervisors performing abatement; mandates lead abatement be performed in accordance with United States Department of Housing and Urban Development (US HUD) guidelines.

**Table 7-1 Regulation of Hazardous Materials**

Agency	Responsibilities
Consumer Product Safety Commission	Prohibits the manufacturing of paint that contains more than 90 ppm of lead.
San Mateo County Department of Environmental Health	Oversees & enforces state/local regulations pertaining to hazardous waste generators and risk management programs, including the California Accidental Release Program; the County's Certified Unified Program Agency (CUPA).

### 7.1.1 Federal Toxic Substances Control Act and Related Toxic Regulations

The Toxic Substances Control Act (TSCA) of 1976 gives the United States Environmental Protection Agency (EPA) authority to require reporting, record-keeping, and testing requirements relating to chemical substances and/or mixtures. TSCA addresses the importation, disposal, use, and production of specific chemicals, including PCBs, asbestos, and lead-based paints (EPA 2012).

TSCA bans the manufacture, processing, use, and distribution in commerce of PCBs. TSCA gives the EPA the authority to develop, implement, and enforce regulations concerning the use, manufacture, cleanup, and disposal of PCBs. Section 40 of the Code of Federal Regulations 761 (40 CFR 761) focuses predominately on the management, clean up, and disposal of PCB-containing materials and equipment that are still in use.

The EPA regulates asbestos through TSCA, the Asbestos Hazard Emergency Response Act, the Asbestos Information Act, and the National Emission Standards for Hazardous Air Pollutants (NESHAP). NESHAP's are rules promulgated by the EPA under the Clean Air Act (40 CFR Section 61.140, et. seq.). Section 61.145 of the asbestos NESHAP regulation, 40 CFR, Subpart M, requires building owners to inspect buildings for asbestos-containing material prior to renovation, remodeling or demolition and to provide written notification of demolition or renovation operations. The EPA defines a material that contains more than 1 percent friable asbestos as a regulated asbestos-containing material (ACM).

The EPA monitors compliance with lead-based paint program regulations under TSCA Subchapter IV and Residential Lead-Based Paint Hazard Reduction Act of 1992. The EPA considers deteriorated, chipping or chalking paint at or above 0.5 percent to be a lead hazard. The EPA's 2008 Lead-Based Paint Renovation, Repair and Painting (RRP) Rule (as amended in 2010 and 2011) requires that firms performing renovation, repair, and painting projects that disturb lead-based paint in homes, child care facilities, and pre-schools built before 1978 be certified by the EPA or an authorized state agency, use certified renovators who are trained by EPA-approved training providers, and follow safe work practices. The EPA also bans consumer products intended for use by children from having more than 0.009% lead paint when children or consumers will have direct access to the painted surface.

### 7.1.2 CARB Air Toxics Hot Spots (AB2588)

The CARB Air Toxics Hot Spots Program, enacted in 1987, requires stationary sources to report the types and quantities of certain substances routinely released into the air, including substances identified by the EPA and the CARB as hazardous air pollutants (HAPs) and toxic air contaminants (TACs), respectively, including asbestos and diesel particulate matter (DPM). The

goals of the Hot Spots program are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels. As part of the program, the Office of Environmental Health Hazard Assessment (OEHHA) has prepared a guidance manual, the Air Toxics Hot Spots Program Guidance Manual, for use in quantifying and evaluating health risks associated with emissions of Hazardous Air Pollutants and Toxic Air Contaminants (OEHHA 2015).

### **7.1.3 Bay Area Air Quality Management District**

BAAQMD Regulation 11, Hazardous Air Pollutants, Rule 2, Asbestos Demolition, Renovation, and Manufacturing, is intended to control emissions of asbestos to the atmosphere during demolition activities. The rule requires the inspection for, and removal of, ACMs prior to demolition and to implement procedures for preventing emissions of asbestos for ACMs that cannot be removed (e.g., asbestos-containing concrete).

### **7.1.4 California Occupational Safety and Health Administration**

Federal Occupational Safety and Health Administrations (OSHA) regulations, locally enforced by Cal/OSHA, define ACM as substances that contain greater than 1% asbestos. Cal/OSHA also mandates special training, medical exams, personal protective equipment and record keeping for employees working with asbestos-containing construction materials (ACCM), or materials that contain <0.1% asbestos. If a material contains less than 1% asbestos but more than 0.1% asbestos, the material may be disposed of as non-ACM, but the Cal/OSHA requirements would still have to be followed regarding workers' protection and Contractor licensing. "Trace" materials (i.e., materials <1% asbestos) are currently regulated in California and require the following:

- Removal using wet methods;
- Prohibition of removal using abrasive saws or methods which would aerosolize the material;
- Prompt clean-up of the impacted zone, using HEPA-filtered vacuums, as applicable;
- Employer registration by Cal/OSHA for removal quantities exceeding 100 sq. ft. per year; and
- Cal/OSHA Carcinogen Registration by the Demolition or Abatement Contractor impacting such materials.

Lead exposures in the workplace are also regulated by Cal/OSHA, which has certain regulatory requirements for identifying and controlling potential lead exposures. Currently applicable regulations for the construction industry have been adopted by Cal/OSHA (8 CCR 1532.1) from the Federal OSHA regulations. The current OSHA 8- hour Permissible Exposure Level (PEL) for lead is 50 µg/m<sup>3</sup>.

### **7.1.5 Lead-based Paint Disposal Requirements**

Current EPA and Cal/EPA regulations do not require LBP to be removed prior to demolition, unless loose and peeling. Provided that the paints are securely adhered to the substrates (i.e., non-flaking or non-peeling), disposal of intact demolition debris can generally be handled in California as non-hazardous and non-RCRA waste. Disposal requirements are included in Table 7-2, below.

Table 7-2 Classification and Disposal of Inorganic Lead Wastes in California								
Standards	TTLc	Leachable Lead		Classifications			Stabilization Required	Landfill Class
Concentrations	1000 mg/kg	5 mg/L						
	Test Methods & Results							
Condition	Total Pb (mg/kg)	STLC Pb (mg/L)	TCLP Pb (mg/L)	Non-haz waste	CalHaz (Non-RCRA)	Fed Haz (RCRA)		
1a	<50 (a1)	NA		Yes	no	no	no	III
1b	<100 (a2)		NA	Yes	no	no	no	III
2a	50 to <1000	<5	<5	Yes (c)	no	no	no	III or II (d)
2b		>5	<5	no	Yes	no	no	I
2c		>5	>5	no	Yes	Yes	Yes	I
2d (b)		<5	>5	no	No	Yes	Yes	I
3a	>1000	<5	<5	No	Yes	No	no	I
3b		>5	<5	no	Yes	no	no	I
3c		>5	>5	no	Yes	Yes	Yes	I
3d (b)		<5	>5	no	no	Yes	Yes	I
4	any	any	any	no	no	Yes	Yes	I
(a1) 50 = 10 x 5 (STLC for Pb). Per WET method, impossible to exceed STLC even if 100% soluble. (a2) 100 = 20 x 5 (TCLP for Pb). Per TCLP method, impossible to exceed STLC even if 100% soluble. (b) Physically impossible due to the stronger acid used in WET than TCLP. (c) Landfills will likely require documentation that TCLP is <5, even though TCLP is almost always less than WET. (d) Landfill dependent, function of permit, landfill liner, or landfill policy Source: SCA Environmental, Inc. 2014								

In California, loose and peeling lead-based paint (LBP) or other wastes require characterization and testing for leachability to determine if the materials would be classified as a RCRA or California hazardous waste.

### 7.1.6 San Mateo General Plan

#### 7.1.6.1 General and Urban Land Use Policies

The following policies to minimize the risks from natural and man-made hazards from the San Mateo County General Plan (San Mateo County 1986), General Plan Policies, Chapter 7. General Land Use Policies, and Chapter 8. Urban Land Use Policies, are relevant to the proposed project:

7.6 *Natural and Man-Made Hazards:* Designate land uses in order to minimize the danger of natural and man-made hazards to life and property.

8.32 *Overcoming Constraints to Development:*

- a. Encourage efficient and effective infrastructure (e.g., water supply, wastewater, roads) necessary to serve the level of development allowable within urban areas.
- b. Encourage improvements which minimize the dangers of natural and manmade hazards to human safety and property.

#### 7.1.6.2 Natural Hazards Policies

The following policies to minimize the risks from natural hazards from the San Mateo County General Plan (San Mateo County 1986), General Plan Policies, Chapter 15. Natural Hazards Policies, are relevant to the proposed project:

15.1 *Minimizing Risks from Natural Hazards:* Minimize the potential risks resulting from natural hazards, including but not limited to, loss of life, injury, damage to property,

- litigation, high service and maintenance costs, and other social and economic dislocations.
- 15.3 *Incorporate Information on Natural Hazards into Land Use and Development Decisions:* Integrate data on natural hazards into review of land use and development proposals in order to identify hazardous areas, potential constraints to development and/or appropriate mitigation measures.
  - 15.4 *Definition of Natural Hazards:* Define natural hazards as conditions of potential danger or risk to life and/or property resulting from acts of nature, man-made alterations to the natural environment that create hazardous conditions, and/or hazardous conditions intrinsic to the natural environment. Natural hazards may include risks or vulnerabilities likely to be caused or exacerbated by climate change.
  - 15.6 *Definition of Fire Hazards:* Define fire hazards as wildland or structural fires that occur in areas that are remote, have difficult access for fire vehicles, and/or contain potentially flammable vegetative communities.
  - 15.7 *Definition of Flooding Hazards:* Define flooding hazards as general and temporary conditions of partial or complete inundation of normally dry land areas due to: (1) the overflow of inland or tidal waters; or (2) the unusual and rapid accumulation of runoff of surface waters resulting from storms, blockage of drainage channels or failures of dams, impoundments, and/or other public works facilities.
  - 15.8 *Definition of Critical Facilities and Structures:* Define critical facilities and structures as facilities or infrastructure serving or housing many people, including but not limited to hospitals, fire, police and emergency service facilities, water, electricity, natural gas supply, sewage disposal, communications and transportation facilities.
  - 15.10 *Designation of Fire Hazard Areas:* Designate as Fire Hazard Areas those areas which are defined by the California Department of Forestry/County Fire Department or other fire protection districts as hazardous, including but not limited to the area within the Hazardous Fire Areas boundaries illustrated on the Natural Hazards map.
  - 15.11 *Designation of Flooding Hazard Areas:* Designate as Flooding Hazard Areas:
    - a. The areas of special flood hazard and dam failure inundation zones as illustrated on the Natural Hazards map.
    - b. Any additional area delineated in greater detail as an area of special flood hazard including but not limited to areas illustrated on special flood hazard the Flood Insurance Rate Maps (FIRM) or dam failure inundation zone maps on file with the County Office of Emergency Services.
  - 15.12 *Locating New Development in Areas Which Contain Natural Hazards:*
    - a. As precisely as possible, determine the areas of the County where development should be avoided or where additional precautions should be undertaken during review of development proposals due to the presence of natural hazards.
    - b. Give preference to land uses that minimize the number of people exposed to hazards in these areas.
    - c. Determine appropriate densities and development.
    - d. Require detailed analysis of hazard risk and design of appropriate mitigation when development is proposed in these areas, including assessment of hazardous conditions

expected to be exacerbated by climate change, such as increased risks of fire, flooding, and sea level rise.

15.13 *Abatement of Natural Hazards:*

- a. Inventory and, where feasible, abate, repair, or rehabilitate natural hazard conditions which most directly threaten public health, safety, and property, giving priority to those hazards which directly threaten critical facilities, life and property.
- b. Where feasible, provide for adaptive reuse rather than demolition of existing facilities.

15.14 *Disclosure of Natural Hazards:* Make efforts to inform the public, including potential buyers of property, that a parcel is located in an area of possible natural hazards. Methods to be used include but are not limited to provision of access to County data, pre-application conferences, environmental review, deed restrictions, requirements for site-specific investigations, educational programs, or other appropriate mechanisms.

15.15 *Critical Facilities:*

- a. Where practical, avoid the location of new critical facilities in areas which contain significant natural hazards or are likely to contain significant natural hazards due to the impacts of climate change.
- b. Continue to work with public utilities, school districts, and other agencies supplying critical public services to ensure that they have incorporated structural safety and other measures to be adequately protected from natural hazards for both existing and proposed facilities and are prepared for potential disasters affecting these facilities.

15.26 *Determination of the Existence of a Fire Hazard:*

- a. When reviewing development proposals, use the Natural Hazards map to determine the general location of hazardous fire areas.
- b. When the Natural Hazards map does not clearly illustrate the presence or extent of fire hazards, use more detailed maps including but not limited to the Fire Hazard Severity Zones Map prepared by the California Department of Forestry (CDF), any other source of information considered to be valid by CDF or by fire protection districts.

15.27 *Appropriate Land Uses and Densities in Fire Hazard Areas:*

- a. In rural areas, consider lower density land uses that minimize the exposure of significant numbers of people to fire hazards.
- b. Consider higher density land uses for fire hazard areas in the rural area if development is clustered near major roads, has adequate access for fire protection vehicles and can demonstrate adequate water supplies and fire flow.
- c. In urban areas, consider higher density land uses to be appropriate if development can be served by CDF/County Fire Department, a fire protection district or a city fire department, adequate access for fire protection vehicles is available and sufficient water supply and fire flow can be guaranteed.

15.28 *Review Criteria for Locating Development in Fire Hazard Areas:*

- a. Wherever possible, cluster new development near existing developed areas where there are adequate water supplies and good access for fire vehicles.
- b. When development is proposed in hazardous fire areas, require that it be reviewed by the County Fire Warden to ensure that building materials, access, vegetative clearance from structures, fire flows and water supplies are adequate for fire protection purposes and in conformance to the fire policies of the General Plan.

15.34 *Vegetative Clearance Around Structures:*

- a. Require clearance of flammable vegetation around structures as a condition of approval to new development in accordance with the requirements of the agency responsible for fire protection.
  - b. Conduct periodic inspections to ensure maintenance of required clearances.
- 15.35 *Fire Retardant Vegetation*: Encourage the use of fire-retardant vegetation when reviewing new development proposals.
- 15.39 *Support Structural Requirements of the County Building Codes*: Support the standards for fire resistant construction contained in the County Uniform Construction Administration Code, including but not limited to requirements for fire resistant roofing, ventilation, windows, chimneys, fire walls and other construction materials.
- 15.40 *Support Efforts to Inventory and Abate Structures that are Fire Hazard Risks*:
- a. Support efforts to inventory and abate structures that do not meet existing fire codes and/or are vulnerable to damage from disastrous fire events.
  - b. Encourage repair, rehabilitation, or adaptive reuse of structures requiring abatement, rather than demolition.
- 15.41 *Incorporate Fire Hazard Concerns During Review of Proposals for New Development*: Incorporate fire hazard concerns into the review of proposals for new development through measures, including but not limited to: (1) regulation of land use and limitation of density, (2) review of access, water supply and hydrant location, (3) conformance to defined hazardous areas design criteria, and (4) conformance with established building code requirements.
- 15.43 *Determination of the Existence of a Flooding Hazard*:
- a. When reviewing development proposals, use the Natural Hazards map to determine the general location of flooding hazard areas.
  - b. When the Natural Hazards map does not clearly illustrate the presence or extent of flooding hazards, use more detailed maps and information, including but not limited to, the Flood Insurance Rate Maps (FIRM) prepared by the Federal Emergency Management Agency (FEMA) for San Mateo County and the dam failure inundation maps prepared for the San Mateo County Office of Emergency Services.
- 15.45 *Abatement of Flooding Hazards*: Support measures for the abatement of flooding hazards, including but not limited to: (1) removal or relocation of development from flood hazard areas; (2) construction of impoundments or channel diversions provided that adequate mitigation of environmental impacts can be demonstrated; and (3) debris clearance and silt removal programs conducted in a manner so as not to disrupt existing riparian communities.
- 15.46 *Appropriate Land Uses and Densities in Flooding Hazard Areas*:
- a. Consider rural land uses that do not expose significant numbers of people to flooding hazards, such as agriculture, timber production, public and private recreation, and general open space, to be the most appropriate for flooding hazard areas.
  - b. Consider higher density land uses to be appropriate within flood hazard areas in developed urban areas and rural service centers when adequate mitigation of the flood hazard can be demonstrated.
  - c. Discourage the location of new critical facilities in flood hazard areas.
- 15.47 *Review Criteria for Locating Development in Areas of Special Flood Hazard*:

- a. Wherever possible, retain natural floodplains and guide development to areas outside of areas of special flood hazard.
  - b. When development is proposed in areas of special flood hazards, require any structure to be safely elevated above the base flood elevation and not contribute to the flooding hazard to surrounding structures.
  - c. Promote subdivision design to avoid areas of special flood hazard when possible, and identify these areas on the approved subdivision map.
- 15.49 *Incorporate Flooding Concerns During Review of Proposals for New Development:* In order to minimize damage to life and property, minimize disruption of commerce and governmental services and avoid the unnecessary expenditure of public funds, incorporate measures which regulate the location, design and intensity of new development in flood hazard areas.

### **7.1.6.3 Man-Made Hazard Policies**

The following policies to minimize the risks from man-made hazards from the San Mateo County General Plan (San Mateo County 1986), General Plan Policies, Chapter 16. Man-Made Hazards Policies, are relevant to the proposed project:

- 16.47 *Strive to Protect Life, Property, and the Environment from Hazardous Material Exposure:* Strive to protect public health and safety, environmental quality, and property from the adverse effects of hazardous materials through adequate and responsible management practices.
- 16.48 *Strive to Ensure Responsible Hazardous Waste Management:* Strive to ensure that hazardous waste generated within San Mateo County is stored, treated, transported and disposed of in a legal and environmentally safe manner so as to prevent human health hazard and/or ecological disruption.
- 16.49 *Strive to Reduce Public Exposure to Hazardous Materials:* Strive to reduce public exposure to hazardous materials through programs which: (1) promote safe transportation, (2) prevent accidental discharge, and (3) promote effective incident response, utilizing extensive inventory and monitoring techniques.
- 16.50 *Reduce Public Exposure to Hazardous Waste:* Strive to reduce public exposure to hazardous waste through programs which: (1) emphasize decreased generation of hazardous waste, (2) promote increased disposal capability for small generators of hazardous waste, including households and small businesses, (3) promote safe transportation of hazardous waste, (4) promote treatment and processing techniques as alternatives to landfill disposal of hazardous waste, and (5) prevent illegal disposal of hazardous waste.
- 16.51 *Definition of Hazardous Material:* Define Hazardous Material as a substance which, because of quantity, concentration, physical or chemical characteristics, is capable of injuring life and/or the environment. Examples include toxic chemicals and metals, pesticides and explosives.
- 16.52 *Hazardous Waste:* Define Hazardous Waste as a hazardous material requiring disposal.
- 16.53 *Regulate Location of Hazardous Material Uses:* Regulate the location of uses involving the manufacture, storage, transportation, use, treatment, and disposal of hazardous



materials to ensure community compatibility. Provide adequate siting, design, and operating standards.

- 16.55 *Encourage Adoption and Enforcement of Fire Code Hazardous Material Storage Permit Provisions:* Encourage fire protection agencies serving the unincorporated area to adopt and enforce existing Uniform Fire Code provisions which authorize fire agency issuance of hazardous material storage permits so as to: (1) assure proper hazardous material storage, (2) prevent accidental discharge or spill, and (3) provide necessary inventory information beneficial to timely and efficient incident response and containment. Assure that relevant hazardous material inventory information is referred to the County and made available to the public.
- 16.68 *Strive Toward Safe Building Construction:* Strive toward safe building construction and full elimination of hazardous conditions.
- 16.69 *Definition of Hazardous Structure:* Define hazardous structure as a building or structure which is structurally unsafe, without adequate egress, a fire hazard or otherwise dangerous to human life by reason of improper construction, inadequate maintenance, dilapidation, obsolescence or abandonment, as specified in the San Mateo County Uniform Construction Code.
- 16.70 *Regulate Building Construction:* Regulate building construction practices to prevent hazardous structures and assure structural safety. Measures may include required conformance to an accepted set of construction standards, and authority to inspect suspected dangerous buildings, halt improper construction activities, and eliminate hazardous conditions.

### **7.1.7 San Mateo County Fire Protection Regulations**

Chapter 3.84 of the San Mateo County Code, Fire Protection Regulations, adopts the California Fire Code by reference and sets forth fire protection regulation pertinent to local conditions. Section 3.84.100 requires fuel breaks around buildings of at least 30 feet, while considering the retention of existing landscaping and sensitive natural habitats. Section 3.84.120 requires compliance with the California Fire Code when constructing, relocating or altering a building. Other sections of the Chapter include revisions to the California Fire Code regarding emergency vehicle access; fire alarms, hydrants and sprinklers; construction and other issues.

## **7.2 ENVIRONMENTAL SETTING**

The project site has been occupied by the existing CMHC building since 1952, and prior to that date the site was undeveloped. The site is surrounded on all sides by protected open space (Pulgas Ridge Open Space Preserve to the north, east and west and Edgewood Park and Natural Preserve to the south). Thus, the existing land use at the site and land uses surrounding the site do not involve the use of underground storage tanks or other large-scale use or storage of hazardous materials that could result in their inadvertent release into the environment. Hazardous materials used and stored on the project site are limited to small amounts used in medical supplies, cleaning supplies and in fuels and fluids for vehicles and equipment. According to the GeoTracker and EnviroStor websites, there are no hazardous materials clean-up sites within 1,000 feet of the project site (DTSC 2019a and 2019b).

The sections below describe hazardous materials used in the construction of the existing CMHC building, the potential occurrence of naturally occurring asbestos (NOA) on the site, and potential wildland fire hazards on the site.

### **7.2.1 Hazardous Building Materials**

Due to the age of the existing CMHC building, ACMs, LBP, or other hazardous materials may be present in the building. SCA Environmental, Inc. (SCA) conducted a hazardous materials investigation of the existing CMHC facility in May 2014 that included the following:

- An inspection and survey of all areas of the CMHC facility, including the nearby pump house and water tower.
- Sampling and non-destructive testing for lead-containing coatings, polychlorinated biphenyls, and ACMs.
- Assessment to quantify possible polychlorinated biphenyl (PCB) lighting ballasts and mercury-containing fluorescent lighting fixtures.
- Visual identification of possible PCB-containing transformers.

The survey was limited to the interior and exterior areas of the CMHC facility (e.g., interior rooms/areas of basement-3rd floors, roof, volleyball court, parking area, etc.), the pump house, and the water tank. County Fire Station 18 and Canyon Oaks Youth Center were not included in the survey.

The results of the survey are summarized in the sections below.

#### **7.2.1.1 Asbestos Containing Materials**

SCA completed an inspection and survey of all areas at the facility including the water tank and pump house. All suspect materials identified were sampled or listed as assumed asbestos-containing. Samples were taken from the surface of the lightweight concrete on the roof of the CMHC building, and the surfaces of various concretes in the building. All building material samples collected were submitted to Asbestos TEM Laboratory in Berkeley, California for analysis by polarized light microscopy with dispersion staining. The sample results were reported as negative for asbestos. However, the samples were limited to surfaces and interior layers of the concrete may still contain asbestos.

As destructive testing was excluded from the investigation, the following items were to be assumed asbestos-containing during the survey: vapor barriers under concrete slab/restrooms, fire doors, and ceramic tiles. It is not uncommon for structures to have a vapor barrier assembly under restrooms and under the concrete foundation slab, as well as the subgrade walls. Given the construction date of the building, this vapor barrier system, if present, could consist of a tar-like substance with waterproofing membrane that often contains asbestos. SCA has assumed that a vapor barrier system may be present under the building concrete slab, on the basement (subgrade) perimeter sidewalls, and under areas with drains within the facilities (e.g., restrooms, kitchens, etc.).

#### **7.2.1.2 Lead Containing Materials**

SCA collected a number of bulk samples from the existing CMHC building for analysis to determine the lead content of these materials. Materials included lead paints and coatings and 9-inch by 9-inch vinyl floor tiles. Lead samples collected were submitted to McCampbell Analytical, Inc. in Pittsburg, California for analysis for total lead content by Flame Atomic Absorption.

Lead concentrations for most paints ranged from 5.6 milligrams per kilogram (mg/kg) to 350,000 mg/kg, with most paints having lead content above the laboratory detection limits.

Lead was also identified in the 9-inch by 9-inch asbestos-containing vinyl floor tiles present throughout the building (97 mg/kg). As the result exceeded 10-times the soluble threshold limit concentration (STLC) of 5 mg/L, Waste Extraction Test (WET) and Toxicity characteristic leaching procedure (TCLP) were performed. Results were found to be 0.56 mg/L and <0.2 mg/L, respectively, indicating that the tiles would not be considered a RCRA waste. The tiles are required to be abated prior to renovation or demolition of the structure because they contain >1% asbestos.

Lead sheeting is known to be present in the E. Offices Area on the 2nd Floor of the existing CMHC building. This area was formerly used as X-ray clinics and dental areas, and visual evidence of lining within the walls and doors was noted during the inspection. As the survey was non-destructive in nature, removal of wall sections to access the sheeting was not performed.

#### **7.2.1.3 Polychlorinated Biphenyls (PCBs) & Mercury-Containing Items**

SCA collected representative samples of caulks and putties to determine PCB content. These samples were analyzed by EPA Method 8082 at McCampbell Analytical, Inc. in Pittsburg, CA and reported in milligrams per kilogram (mg/kg). SCA also quantified lighting ballasts that were observed in conjunction with mercury-containing, fluorescent lighting fixtures in various locations.

The results are summarized as follows:

- No PCBs were identified in any caulks or putties sampled.
- Various lighting ballasts were identified throughout the building.
- Various mercury-containing fluorescent tubes were identified throughout the building.

SCA also noted three (3) transformers at the property. These transformers are owned by PG&E. As the units were functioning at the time of the investigation, sampling of transformer fluids to determine PCB content was not performed. No visual evidence of staining was noted during the investigation. As the units are owned by PG&E, disposal of the PCB-containing fluids, if present, would be the responsibility of PG&E.

#### **7.2.2 Naturally Occurring Asbestos**

According to the feasibility study geotechnical report prepared for the project (Arup 2014), the site is not in a known location of asbestos occurrence and no outcrops of serpentinite or other ultramafic rocks were noted during the site reconnaissance. However, not enough of the bedrock geology of the site was observed during the site reconnaissance to rule out the presence of ultramafic or serpentine rocks to be present. In addition, a literature review of the Franciscan Complex mélange (the bedrock material at the site) indicated that serpentine is often found within the mélange material. The geotechnical report concludes that if there are ultramafic rocks on the site, the exposures should be isolated and that the risks from NOA are low.

#### **7.2.3 Naturally Occurring Arsenic**

Soil sampling conducted on the site within the development footprint detected the presence of arsenic in all samples at a range of 4.5 to 8.9 mg/kg with a resultant arithmetic mean concentration of 5.8 mg/kg (Vista Environmental Consulting 2019). The samples fall within the expected range and arithmetic mean concentration of naturally occurring arsenic, which in local East Bay hills can be as high as 24 mg/kg. While this concentration is higher than

DTSC/RWCBB screening levels (ESL), the concentrations do not rise to levels that raise agency concern (e.g., 1000 or 10,000 times above the ESL).

#### **7.2.4 Flood Hazards**

The proposed CMHC buildings are located in the valley floor between two steep sided valleys. Cordilleras Creek runs through the west-east valley collecting water from the northern and southern valley slopes through a series of ephemeral tributaries, prior to being culverted and diverted to the south of the existing building. An un-named creek is located in a valley immediately north of the proposed new CMHC facilities. This creek is currently contained within a culvert to the north of the existing CMHC building.

The information below is based on the 2014 Preliminary Engineering Geology and Geotechnical Engineering Feasibility Report by Arup.

##### **7.2.4.1 Flash Flooding**

Review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), classifies the project site as Zone X (unshaded) which is defined by the FEMA Flood Zones as ‘Minimal risk areas outside of the 1% and 0.2% annual chance floodplains.’ No Base Flood Elevations (BFE) or base flood zones are shown within these zones. This statement is further caveated by the FEMA Flood Zone (2014) definition as:

*“Areas of moderate or minimal hazard are studied based upon the principal source of flood in the area. However, buildings in these zones could be flooded by severe, concentrated rainfall coupled with inadequate local drainage systems. Local stormwater drainage systems are not normally considered in a community’s flood insurance study. The failure of a local drainage system can create areas of high flood risk within these zones. Flood insurance is available in participating communities but is not required by regulation in these zones. Nearly 25-percent of all flood claims filed are for structures located within these zones.”*

Review of National Oceanic and Atmospheric Administration (NOAA) precipitation intensity and depth predictions for the site indicates that the maximum anticipated 1:100 year 24-hour rain storm would result in 6.8 in of rainfall falling, with a peak intensity of (5-minute-duration rainfall event) of 5.3 inches/hour (NOAA 2014 as cited by SCA Environmental 2014). Based upon the possible conclusions from a review of the NOAA historical rainfall data for the site based upon the NOAA 2014 predictions, the site has experienced a 1:25-year, 24-hour rainstorm with 4.9 inches of precipitation falling during a 24-hour period in 1962 and a 1:10-year, 30-day rainstorm, with 12.4 inches of precipitation recorded in February 1998. The NOAA archives records date back to 1931.

The facilities engineer for the existing CMHC facility has indicated that the site is prone to seasonal flooding of the outdoor recreation area when high flows back up at the culvert entrance.

There is therefore currently a flash flooding risk at the site, which without management could be exacerbated by the proposed development.

##### **7.2.4.2 Debris-Induced Flooding**

The current drainage system diverts both Cordilleras Creek and the unnamed creek around the existing structure through buried culverts. Should debris or backed-up high flow dam the culvert, flooding could occur around the building. The geotechnical site reconnaissance survey (Arup 2014) identified that the culvert was partially blocked by leaves and other detritus and in a poor state of repair.

Clearing vegetation on the valley floor or valley slopes would increase debris flow potential. There is a potential for debris flows to block the creek channel which could lead to localized flooding of the valley floor.

Review of the FEMA flood insurance risk maps and the NOAA historical data and prediction tools for the site indicates that the site is classed as Zone X (unshaded) minimal risk. Review of the historical NOAA rainfall data indicates that the site has experienced 1:25 year precipitation events. Evidence from the walkover survey indicates that the current site is prone to seasonal ponding of water, potentially related to the culvert system associated with the existing CMHC building. This indicates that there is a potential risk associated with flooding at the site.

## **7.3 PROJECT IMPACTS**

### **7.3.1 Thresholds of Significance**

Based on Appendix G of the CEQA Guidelines and the San Mateo County Initial Study Environmental Evaluation Checklist, the project would have a significant impact to hazards and hazardous materials if it would:

- (a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (e.g. – pesticides, herbicides, other toxic substances, or radioactive material);
- (b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- (c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- (d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- (e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area;
- (f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- (g) Place housing within an existing 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- (h) Place within an existing 100-year flood hazard area structures that would impede or redirect flood flows;
- (i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- (j) Inundation by seiche, tsunami, or mudflow.

The proposed project would have no or minimal impact with regard to the following thresholds; therefore, these issues are dismissed from further discussion in the sections below:

- The site is not on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and therefore it would not create significant hazard to the public or the environment as a result.
- The project site is not within an airport land use plan or within two miles of a public airport or public use airport. The closest public airport to the project site is the San Carlos Airport, approximately 3.3 miles east of the site. Therefore, the project would not result in a safety hazard for people residing or working in the project area.
- The proposed project would not impair implementation of or physically interfere with the San Mateo County Emergency Operations Plan (2011) or any County evacuation plans, such as the Tsunami Evacuation plan. Access roads at the site would be wide enough to allow for emergency vehicle access as well as evacuation procedures during an emergency.
- The project site is not within a 100-year flood hazard area, and thus would not place housing or structures in such an area. The project would not impede or redirect flood flows. The project site is in Flood Zone X (FEMA 2019). Zone X is defined by the FEMA Flood Zones as “Minimal risk areas outside of the 1% and 0.2% annual chance floodplains.”
- A tsunami is a large ocean wave usually created by undersea fault movement or by a coastal or submerged landslide. The project site is not near the coast and is not within the Tsunami inundation zone (California Department of Conservation; CDOC 2019). A seiche is a temporary disturbance or oscillation in the water level of a lake or partially enclosed body of water, especially one caused by changes in atmospheric pressure. The closest large water body to the site is the Crystal Springs Reservoir, approximately 2 miles northwest of the site. The project site is not expected to be impacted by a seiche from the reservoir and is not within the reservoir’s inundation zone (San Mateo County 2005). Mudflow is not expected but is generally addressed as slope instability in Geology, section 6.2.4.

### **7.3.2 Routine Transport, Use or Disposal of Hazardous Materials**

There are a number of hazardous materials that would be transported and disposed of from the CMHC building during demolition, as well as use of hazardous materials during all phases of project construction. Hazardous materials that could be transported and disposed of includes lead-based paint, mercury, asbestos, and PCBs. Various types of fuels, oils, and lubricants associated with construction vehicles would be used throughout the project. Paints, thinners, adhesives, solvents, and other such materials are anticipated to be used during construction of the new facility. Mitigation Measures HAZ-1a-d contain requirements to identify the presence of hazardous materials in differing types of construction materials present in the CMHC facility, and to dispose of any materials identified as hazardous in an appropriate way. Implementation of Mitigation Measures HAZ-1a-d and the identification of hazardous materials and following existing codes and regulations, such as the Toxic Substances Control Act, in regards to transport and disposal would reduce potential impacts from the routine transport and disposal of hazardous materials to a less than significant level. The impact is *less than significant with mitigation incorporated*.

Routine construction control measures and BMPs regarding use of hazardous materials such as fuels, oils, and lubricants would be sufficient to keep potential impacts from the use of hazardous materials at a *less-than-significant* level.

The County or its Contractor must develop and implement a demolition debris management and disposal plan for the non-Resource Conservation and Recovery Act hazardous materials that are to be removed from the project site per compliance with County waste diversion requirements in San Mateo County Code of Ordinances, Section 4.105.030 (100 percent of inert solids and at least 50 percent of the remaining construction and demolition debris tonnage). The plan must be designed to prevent releases of hazardous materials in quantities that could pose a risk to human health and the environment, as determined using appropriate BAAQMD, RWQCB, DTSC, and/or other appropriate agency screening thresholds. Compliance with state and federal requirements and implementation of the debris management and disposal plan specified in Mitigation Measure HAZ-1 would ensure the project has a less-than-significant impact related to disposal of hazardous materials. The impact is *less than significant with mitigation incorporated*.

### 7.3.3 Accidental Release of Hazardous Materials

There is potential for accidental release of hazardous materials that would be transported, used, and disposed of during project demolition and construction. Mitigation Measures HAZ-1a-d contain requirements to identify the presence of hazardous materials in differing types of construction materials present in the CMHC facility, and to dispose of any materials identified as hazardous in an appropriate way. The identification of hazardous materials, following existing codes and regulations such as the Toxic Substances Control Act, and implementation of Mitigation Measures HAZ-1a-d would reduce potential impacts from the use of hazardous materials to a less than significant level. The impact is *less than significant with mitigation incorporated*.

Routine construction control measures and BMPs in regards to use of hazardous materials such as fuels, oils, and lubricants would be sufficient to keep potential impacts from the use of hazardous materials at a *less-than-significant* level.

Operation of the facility once completed would continue to use applicable BMPs and obey existing regulations relating to the routine use of hazardous materials, such as cleaning solvents, and would have a *less-than-significant* impact.

### 7.3.4 Emissions Near Schools

The nearest school is Clifford Elementary School, approximately 1.3 miles to the north east of the project site which would not be at risk of potential emissions from the project. However, the Canyon Oaks Youth Center, which is located on the same site as the CMHC facility, is a coeducational residential treatment program serving both mental health and educational needs of SMC adolescents aged 12-17. Due to its educational nature, this facility is treated as a school under CEQA and is therefore considered to be a sensitive receptor. There is potential for release of hazardous emissions during project demolition and construction and hazardous materials would be handled on the site.

Hazardous materials that would be handled on the site includes lead-based paint, mercury, asbestos, and PCBs. Additionally, various types of fuels, oils, and lubricants associated with construction vehicles on site, would also be handled, as would paints, thinners, adhesives, solvents, and other similar materials during construction of the new facility. Adherence to

Mitigation Measures HAZ-1a-d as well following all applicable codes, laws and regulations would minimize the potential for accidental emission of hazardous materials and the risk to nearby schools and would reduce impacts to a less-than-significant level. The impact is *less than significant with mitigation incorporated*.

### 7.3.5 Risks Involving Flooding

The closest large water bodies to the site are the Crystal Springs Reservoir, approximately 2 miles northwest of the site, and the Lower Emerald Lake, approximately 1.3 miles to the south east of the site. The project site is located outside of the inundation zone of these water bodies and would not be impacted by flooding from these water bodies (San Mateo County 2005). As a result, the project would not expose people or structures to risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam. The impact is *less than significant*.

## 7.4 CUMULATIVE IMPACTS

Certain hazards are largely site specific, such as handling or transporting hazardous materials, and the magnitude of this risk would be dependent on the site-specific conditions present at each specific site. Regardless of the potential risk, each project would be required to implement handling and transportation mitigation based on existing laws and regulations. The project specific handling and transporting of hazardous materials are not significantly adding to existing impacts from the routine use and transport of hazardous materials and would not have a cumulative significant impact on the environment.

The project does not have any significant impacts relating to airport land use plans, adopted emergency response/evacuation plans, flood hazards, or inundation. There would be no cumulative impacts relating to these hazards.

## 7.5 MITIGATION MEASURES

**Impact HAZ-1:** Demolition, removal, and transport of building materials containing lead, asbestos containing material, PCBs, mercury, and any project soils containing elevated levels of soluble lead could result in airborne emissions of lead resulting in exposure of workers or the environment to a hazardous material.

**Mitigation Measure HAZ-1a:** The County or its Contractor shall develop and implement a demolition debris management and disposal plan for the non-RCRA hazardous materials that are to be removed from the project site. The plan shall be designed to prevent releases of hazardous materials in quantities that could pose a risk to human health and the environment, as determined using appropriate BAAQMD, RWQCB, DTSC, and/or other appropriate agency screening thresholds.

The plan shall identify the receiving qualified landfill and present proof of waste acceptance. The plan shall specify measures to minimize airborne dust during building deconstruction and soil movement to protect construction workers and neighboring residents from exposure to hazardous material emissions. The plan shall address protection of worker exposure to airborne lead paint particulates through use of personal protective gear, clear identification of the location of hazardous materials, and removal by properly trained/certified workers, and proper cover and transport of hazardous materials, etc.



**Mitigation Measure HAZ-1b:** Consistent with the Hazardous Materials Investigation prepared for the project (SCA Environmental 2014), a coring contractor shall be retained prior to demolition of the structures to perform the following:

- Core sampling and analysis to determine asbestos content on all roof decks where lightweight concrete is present.
- Core sampling and analysis to determine asbestos content of all layers of concrete for the various building systems.
- Core sampling under restrooms, under the concrete foundation slab, as well as the subgrade walls to verify the presence of a vapor barrier system. If present, the material shall be tested to verify asbestos content. If the material is found to contain asbestos, the demolition contractor shall possess asbestos-registration and proper training, and such concrete shall not be recycled.
- Destructive testing of all other materials assumed to contain asbestos in the Hazardous Materials Investigation (see table in Attachment A of Appendix E).

If any of the above-listed materials are found to contain asbestos, such materials shall be abated in accordance with applicable federal, state and local regulations regarding worker safety and the safe removal and disposal of ACMs.

**Mitigation Measure HAZ-1c:** Consistent with the Hazardous Materials Investigation prepared for the project (SCA Environmental 2014):

- Destructive sampling of the lead sheeting in the E. Offices Area on the 2nd Floor of the existing CMHC building shall be performed prior to renovation or demolition of the building to determine the presence and lead content of this material.
- For the purpose of complying with the Cal/OSHA regulation of lead in construction (8 CCR 1532.1), all coated surfaces in the existing CMHC building shall be considered to contain some lead and require demolition dust control procedures for compliance with Cal/OSHA's Construction Lead Standard under 8 CCR 1532.1. The aforementioned regulation contains requirements for lead air monitoring, work practices, respiratory protection, etc., that are triggered by the presence of even very low levels of lead.
- Based on the California Total Threshold Level Concentration (TTLC) hazardous waste standard, the paints may be classified as hazardous wastes. The County or its Contractor shall perform additional sampling and analysis for leachable lead content during demolition to determine waste characterization.

**Mitigation Measure HAZ-1d:** PCBs and mercury-containing materials in the existing CMHC building shall be disposed of in accordance with Cal/EPA regulations prior to building demolition. Disposal methods may include those suggested in the Hazardous Materials Investigation (Appendix E):

**Effectiveness:** *The measures would ensure compliance with state and federal regulations regarding the handling and disposal of non-RCRA hazardous materials.*

**Implementation:** *San Mateo County or its Contractor.*

**Timing:** *Plans addressing management of all hazardous materials shall be submitted to the County PDU prior to construction activities beginning on the site.*

**Monitoring:** *County shall review hazardous waste management plan prior to issuance of grading permit. The County or its Contractor shall submit written*

*documentation of landfill acceptance of hazardous waste and implementation of worker and site occupant protective measures taken during site deconstruction. Copies of all documentation shall be kept on file at the County PDU.*

## CHAPTER 8 HYDROLOGY AND WATER QUALITY

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### 8.1 REGULATORY SETTING

#### 8.1.1 Federal Clean Water Act

The Clean Water Act (CWA) authorizes the U.S. Environmental Protection Agency to regulate water quality in California by controlling the discharge of pollutants to water bodies from point and non-point sources through the National Pollution Discharge Elimination System (NPDES).

##### 8.1.1.1 Section 402 -- NPDES Regulations for Municipalities

In San Mateo County, as with the rest of the Bay Area, NPDES permits are administered by the San Francisco Bay Regional Water Quality Control Board (RWQCB), a division of the State Water Resources Control Board (SWRCB). Phase I of the NPDES program covered discharges from industrial sites, construction sites larger than five acres, and municipal separate storm sewer systems (MS4s) serving populations of more than 100,000 people. The Phase II expansion of the MS4 program in 1999 expanded its coverage to include “Small” MS4s that serve:

- Urbanized areas as defined by the U.S. Census;
- Areas of high growth or high growth potential;
- Areas that discharge to sensitive water bodies or another regulated MS4; and,
- Areas that make a significant contribution to pollution of waters of the U.S.

In San Mateo County, discharges are permitted under the San Francisco Bay Regional Municipal Regional Stormwater NPDES Permit (MRP; Order No. R2-2015-0049). The MRP covers municipalities and unincorporated areas of Alameda, Contra Costa, San Mateo, and Santa Clara Counties, along with the cities of Fairfield, Suisun, and Vallejo.

Permittees are required to develop, implement and enforce a Storm Water Management Program to prevent discharges of pollutants and impacts to beneficial uses of receiving waters. The receiving water for runoff from the proposed project is Cordilleras Creek, which is tributary to Smith Slough and ultimately the San Francisco Bay. Beneficial uses for Cordilleras Creek, as listed in the Basin Plan (SFRWQCB 2017), include warm freshwater habitat, wildlife habitat, water contact recreation, and noncontact water recreation. In addition, Smith Slough supports preservation of rare and endangered species as a beneficial use, and beneficial uses for South San Francisco Bay include industrial service supply; commercial/recreational fishing and shellfish harvesting; estuarine and wildlife habitat; fish migration; rare and endangered species habitat; potential spawning habitat; and various contact and non-contact recreation.

The MRP includes post-construction provisions to prevent non-stormwater discharges, minimize the discharge of pollutants in stormwater runoff, and prevent a development-caused worsening of stream channel erosion and sediment deposition resulting from hydromodification of a watershed. In order to minimize pollutant discharges, projects must provide the capacity to either infiltrate or evapotranspire all runoff generated by the 85th percentile storm event, typically through the application of low impact development (LID) design principles that seek to minimize the amount of land covered by impervious surfaces and maximize opportunities for infiltration. Treatment measures must be provided for runoff that cannot be diverted from the site's stormwater discharges in this way, typically using bioretention facilities that are able to remove or otherwise neutralize identified pollutants. Erosive flow rates that cannot be sufficiently

reduced by site design strategies must be controlled through detention storage or through stabilization of downstream conveyances that would be adversely affected. Because these required treatment and detention facilities will require maintenance for the life of a development project, developers must also establish a dedicated funding responsibility for either the future owners of the land or a designated public entity. In its role as an MS4 operator and permit holder, the County of San Mateo is required to enforce these site design and water quality protection measures for all new and redevelopment projects within its jurisdiction.

### ***Construction Sites***

The SWRCB administers the NPDES General Permit for Discharges of Stormwater Runoff Associated with Construction Activity (General Construction Permit). In order to cover a construction project disturbing one acre or more of land under the General Construction Permit, a facility must submit a Notice of Intent to the SWRCB prior to the beginning of construction. Effective July 1, 2010, all dischargers are required to obtain coverage under the Construction General Permit Order 2009-0009-DWQ adopted on September 2, 2009. The General Construction Permit requires that projects develop and implement a Stormwater Pollution Prevention Plan (SWPPP), identifying potential sources of pollution and specifying runoff controls during construction for the purpose of minimizing the discharge of pollutants in stormwater from the construction area. The SWPPP should contain a site map which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list BMPs the discharger will use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The permit also includes post-construction standards with the requirement for all construction sites to match pre-project hydrology to ensure that the physical and biological integrity of aquatic ecosystems is maintained. This "runoff reduction" approach is analogous in principle to Low Impact Development (LID) and serves to protect related watersheds and water bodies from both hydrologic-based and pollution impacts associated with the post-construction landscape.

#### **8.1.1.2 Section 401 of the Clean Water Act**

Under the auspices of the CWA, the USACE administers permitting programs that authorize impacts to "waters of the United States" including "wetlands" and "other waters." Such impacts may not be permitted until the SWRCB, acting through its regional boards, certifies that the activities covered by the permit will not violate water quality standards. Certification must be consistent with the requirements of the federal CWA, CEQA and CESA, and with the SWRCB's mandate to protect beneficial uses of waters of the state. Refer to EIR section 4.1.3 for additional discussion.

#### **8.1.2 California Porter-Cologne Act**

The Porter-Cologne Act requires "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the State (any surface water or groundwater, including saline waters) to file a report of discharge" with the local RWQCB by submitting an application for waste discharge. The RWQCB determines if a project should be regulated pursuant to this act based on the likelihood that it would pose any "threat" to water quality. The San Francisco Bay RWQCB considers the placement of clean fill in waters of the

State to constitute "pollution," because it can potentially alter existing water quality, which may adversely affect its beneficial uses. Refer to EIR section 4.1.9 for additional discussion.

### **8.1.3 California Fish and Game Code**

Existing stream channels in California are protected under sections 1600-1603 of the California Fish and Game Code. These regulations specify that it is a landowner's responsibility to obtain a state permit before undertaking any modifications within an existing stream channel up to the top of bank. Stream channels are defined by the California Department of Fish and Wildlife (CDFW) as exhibiting evidence of scour, having a definable bank, or having or being capable of supporting riparian vegetation. This definition would apply to Cordilleras Creek upstream and downstream of the project site, as well as the small tributary that drains to the project site from the north. (Please refer to EIR Chapter 4, Biological Resources for additional discussion of the project site's existing biological resources and for a description of associated project impacts and mitigation requirements).

### **8.1.4 Local Regulations**

#### **8.1.4.1 County of San Mateo Storm Water Program**

As noted above, the operators of municipal storm sewer systems must comply with the permitting provisions of the NPDES. The San Mateo Countywide Pollution Prevention Program (SMCWPPP) was established in 1990 to address potential stormwater quality concerns and satisfy the requirements of the NPDES permit. The program is a partnership of the County and each of the 20 incorporated cities and towns within the county and guides the implementation of the NPDES permit for new and redevelopment projects. Some of the requirements of the MRP are implemented directly by the member municipalities, while others are implemented by SMCWPPP on behalf of all municipalities.

#### **8.1.4.2 County of San Mateo General Plan**

The County of San Mateo General Plan policies related to hydrology and water quality that are applicable to the proposed project are summarized below.

#### ***Resource Protection***

*Policy 1.26:* Protect Water Resources: Ensure that development will: (1) minimize the alteration of natural water bodies, (2) maintain adequate stream flows and water quality for vegetative, fish and wildlife habitats; (3) maintain and improve, if possible, the quality of groundwater basins and recharge areas; and (4) prevent to the greatest extent possible the depletion of groundwater resources.

#### ***Productive Uses***

*Policy 1.37:* Protect the productive uses of water resources: Ensure that land uses and development on or near water resources will not impair the quality or productive capacity of these resources.

#### ***Resource Management Coordination***

*Policy 1.41:* Encourage Coordinated, Countywide Management of Vegetative, Water, Fish and Wildlife Resources: Encourage all federal, state, regional, county, and city agencies with jurisdiction in San Mateo County to cooperate and coordinate the management and protection of vegetative, water, fish and wildlife resources.

### ***Role of the County***

**Policy 1.44:** Develop Standard Mitigation Measures: Develop mitigation measures which could be the basis for measures recommended to protect sensitive habitats, vegetative, water, fish and wildlife resources and their productive uses from development activities in the County.

**Policy 1.45:** Improvement of Damaged Resources: Encourage programs which repair and/or enhance damaged vegetative, water, fish and wildlife resources and sensitive habitats, with the goal of returning them to their natural condition.

**Policy 1.49:** Encourage the Management of Riparian Corridors: Encourage and, to the maximum extent feasible, reward the efforts of those responsible for managing riparian corridors in a manner that is consistent with County and State guidelines.

## **8.2 ENVIRONMENTAL SETTING**

### **8.2.1 Regional Hydrology**

The project site is situated within the upper Cordilleras Creek watershed, one of a number of small streams that drain the eastern side of the Coast Range toward San Francisco Bay within San Mateo County. The Cordilleras watershed, in total, encompasses approximately 3.3 square miles, though only about 0.3 square miles are at or upstream of the project site itself. Urban development generally increases in density toward the downstream end of the watershed, with the upper watershed (upstream of the project site) comprised almost entirely of open space and park areas (Pulgas Ridge and Edgewood), with light- to moderate-density development in the reaches immediately downstream of the site, increasing to heavily urbanized areas downstream of Alameda de las Pulgas. The channel remains as an open channel predominantly along its natural alignment throughout the watershed but has been constrained by urbanization through most of its length. The channel is incised, with armored and repaired banks in response to past and on-going erosion of the channel.

Average annual rainfall in the Cordilleras watershed varies from about 36 inches at the crest of the Coast Range to about 18 inches near the mouth (Rantz 1971). Nearly 95 percent of this precipitation falls during the winter rainy season, October through April, with the heaviest rainfall typically occurring in December, January, and February.

### **8.2.2 Project Site Hydrology**

The project site is located within the upper Cordilleras Creek watershed, near the confluence of two small canyon watersheds. The project site is at an elevation of about 300 feet above mean sea level (amsl), though is surrounded by hills that reach elevations that range between 500 and 650 feet amsl. Upstream of the project site the Cordilleras Creek mainstem watershed drains approximately 144 acres, with three other smaller drainages of 87, 18, and 7 acres merging at the project site. The watersheds upstream of the project site, totaling 256 acres, are almost entirely undeveloped, all of which is open space with the exception of a small Youth Center adjacent to the project site, a section of Edgewood Road that leads to Interstate 280 just over the ridge, and various unpaved trails and fire roads (Figure 8-1 Cordilleras Watershed).

The project site is occupied by the existing CMHC building constructed in 1949. This building was built over top of the Cordilleras Creek channel, with the main creek channel flowing within a 48-inch culvert that runs underneath the facility. Drainage from the upper portions of two other smaller sub-watersheds, one from the north and one from west, are also captured by culverts.

Additionally, drainage from Edgewood Road is directed into the Cordilleras Creek drainage system at the project site. These culverts all discharge at an existing outfall just downstream of the project site at Edmonds Road (Figure 8-1). Runoff from existing rooftops, sidewalks, driveways and parking lots all drain to this system of culverts with limited, if any, detention facilities.

The portion of Cordilleras Creek immediately upstream of the project site is characterized by significant deposits of sediment, likely a result of backwater effects at the inlet to or within the culvert that flows underneath the existing facility. In addition, reconnaissance of the existing facility suggests that sediment deposition is present within the culvert as well (San Mateo County 2011b), likely reducing the flow capacity of the storm drain system. As a result, the creek has been known to overflow and flood portions of the existing facility during large storm events, though flooding may have also been a result of lack of maintenance of the debris rack at the upstream end of the culvert as opposed to a lack of capacity in the pipes (BKF 2016).

### **8.2.3 Downstream Hydrology**

Immediately downstream of the project site, Cordilleras Creek is contained within an incised channel that shows evidence of on-going bank erosion within little- to low-density developed areas. Further downstream, the channel flows through increasingly urbanized areas, with bank protection and repair projects present intermittently through its entire length (SMCWPPP 2007). The 100-year storm event is predominately contained within the channel, except for a portion between Edgewood Road and Alameda de las Pulgas in the middle watershed, and below the CalTrain tracks in the lower watershed (Figure 8-2 Natural Flood Hazard Map).

### **8.2.4 Project Site Soils and Groundwater**

The approximately 20-acre project site is currently occupied by the existing CMHC building and associated walkways, parking lots, outbuildings, and other paved/impervious areas. The soils underneath the developed portions of the site are predominately compacted urban cut-and fill associated with the original development of the site. Soils in open space areas adjacent to developed areas are predominantly loam to gravelly loam with high to moderate slope, and are classified as hydrologic group C and D, with low infiltration potential. Some near-surface groundwater is present within the shallow alluvial and fill deposits adjacent to Cordilleras Creek and underneath the project site, but no significant aquifers are present in the project area.

## **8.3 PROJECT IMPACTS**

### **8.3.1 Thresholds of Significance**

Based on Appendix G of the CEQA Guidelines and the San Mateo County Initial Study Environmental Evaluation Checklist, the impact of the proposed project on hydrology and water quality would be considered significant if it would:

- (a) violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality (consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical stormwater pollutants: e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash);

- (b) substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- (c) substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:
  - (i) result in substantial erosion or siltation on- or off-site
  - (ii) substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off-site;
  - (iii) create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff; or
  - (iv) impede or redirect flood flows
- (d) in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation;
- (e) conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan;
- (f) significantly degrade surface or groundwater water quality;
- (g) result in increased impervious surfaces and associated increased runoff.

The proposed project would have no or minimal impact with regard to the following thresholds; therefore, these issues are dismissed from further discussion in the sections below:

- The project does not propose discharge of wastewater to land, therefore, waste discharge requirements do not apply to this project. Water quality standards pertaining to stormwater runoff are discussed below.
- No structures or impervious surfaces would be placed within existing drainages in a manner that would impede or redirect flood flows. Other effects associated with modification to drainage patterns are discussed below.
- The project area is located in the upper part of the Cordilleras Creek watershed, with no potential for inundation as a result of a flood, tsunami or seiche. There is no FEMA-designated 100-year flood zone within the proposed project. There are no levees or dams on or upstream of the project site that would pose a risk to the site as a result of a breach.

### **8.3.2 Groundwater Supplies and Groundwater Recharge**

The proposed project would not pump groundwater at the project site and therefore would not deplete local groundwater supplies. It would increase impervious surface area at the project site, which could reduce groundwater infiltration. However, several factors limit the potential impact to groundwater supply:

- The increase in impervious surfaces relative to existing conditions is small (1.1 acres) when compared to the large amount of area within the upper Cordilleras Creek watershed that would remain as open space (over 197 acres).
- The project does not overly an aquifer with substantial groundwater supplies.



- The project site is located in an area with soils that have relatively low infiltration capacity due to the fine-grained loamy composition and have been compacted by prior construction and operational activities.
- The proposed project would incorporate biofiltration basins and/or swales as water quality/hydromodification treatment measures for stormwater runoff from impervious surfaces. While these facilities are unlikely to use infiltration as a primary treatment measure (due to infiltration capacity constraints), some infiltration of stormwater runoff may occur, which would help offset any potential impact. Such facilities are not present within the existing facility.

For these reasons, the project would not substantially interfere with groundwater recharge and the impact would be *less than significant*.

### 8.3.3 Altered Drainage Patterns

#### 8.3.3.1 Erosion or Siltation On- or Off-Site

Construction-related impacts relating to erosion or siltation both on and off-site are discussed in EIR section 8.3.2 above. Implementation of the project-specific SWPPP in compliance with County regulations would reduce erosion and siltation during project construction. The resulting impact would be *less than significant*.

With regard to runoff generated by the new impervious surfaces added by the project to the project site, as discussed below, compliance with the NPDES General Permit would limit post-construction hydromodification effects that could induce in-stream erosion and cause siltation in downstream reaches. The impact would be *less than significant*.

The proposed project would refurbish the outfall to Cordilleras Creek directly below the project site and redesign a second, smaller outfall entering from the southern bank approximately 100 feet downstream of the main outfall. The original main outfall apron was constructed of smooth concrete, providing little dissipation of energy before entering the natural creek channel. The redesigned outfall and smaller downstream culvert would be redesigned to dissipate flow energy before entering the natural channel. The drainage system design would incorporate bio-engineering measures to address creek flow impacts to jurisdictional waters as required by permitting agencies (Biology section 4.3.4). As such, both outfalls would have additional energy dissipation relative to the existing structures and are unlikely to cause an increase in erosion in the channel downstream of the outfall. The drainage improvements are subject to design review and permitting by resource agencies (i.e., USACE, RWQCB, and CDFW). Impacts would be *less than significant*.

#### 8.3.3.2 Increased Rate or Amount of Surface Runoff Resulting in Flooding On or Off-Site

The proposed project would increase impervious surfaces within the project site by 0.9 acres, replace and realign a culvert that carries Cordilleras Creek flow beneath the existing project site, replace and redirect a culvert that carries flow from a minor tributary to Cordilleras Creek from the north, and completely redesign the storm drain network within the project site to be consistent with the new project configuration. With the exception of localized, temporary disturbances of Cordilleras Creek during construction of the new inlet and outlet structures upstream and downstream of the project site, the open portion of the Cordilleras Creek channel would remain in the same condition. As such, though the culvert drainages would be reconfigured and rerouted, the general drainage pattern would be similar to existing conditions.

### ***Project Site Flooding***

As discussed in EIR section 8.2.2, the current project site is prone to flooding during major storm events as a result of high flows in Cordilleras Creek backing up at the upstream inlet structure feeding the pipeline carrying creek flows beneath the project site. The project design team worked with the County of San Mateo building department civil engineer to outline the necessary protections needed to reduce this existing potential for flooding at the project site.

The proposed project would upgrade the upstream headwall/debris rack, alter the alignment and increase the capacity of the lower portion of the main storm drain that carries Cordilleras Creek underneath the site, and repair/refurbish the outfall structure at the downstream end of the site. The upgraded infrastructure has been sized to accommodate the 100-year storm based on a 6-hour rainfall event. The new inlet structure would be adapted to include an overflow riser designed to maintain inflow even when impacted by debris catching on the rack, but routine inspection and clearing of the rack is needed in order to maintain appropriate conveyance. Similarly, routine inspections and potential clean-out of sediment in the main culvert would be needed to maintain capacity. Routine maintenance of the debris rack and culvert to remove debris and sediment would be performed through implementation of maintenance required in Mitigation Measure HYD-1.

All storm drains that carry runoff from within the project site itself would be designed to pass the 10-year 1-hour rainfall event. Routine maintenance of the detention basin system would be performed through implementation of maintenance required in Mitigation Measure HYD-1.

As a result, no on-site flooding is expected to occur as the result of site improvements. The impact would be ***less than significant with mitigation incorporated***.

### ***Downstream Flooding***

Slight increases in impervious surfaces at the site (1.1 acre increase; see Table 8-1) would have the potential to increase peak flows downstream of the project site and result in increased flooding in the lower Cordilleras watershed at locations where the 100-year peak flow currently exceeds the capacity of the creek channel and/or associated infrastructure (Figure 8-1). In order to prevent increases in peak flow from the site as a result of increased impervious surfaces, the project proposes to expand the bioretention basins at the site to also include enough detention storage to off-set this increase.

**Table 8-1 Impervious Surface Area within Project Disturbance Limit**

	Existing Conditions		Post-Project Conditions		Post Project Change	
	(acres)	(%)	(acres)	(%)	(acres)	(% of existing condition)
Roof	1.0	13.5	1.5	16.2	0.5	150
Pavement	1.7	23.0	2.3	32.4	0.6	135
Pervious landscaping/surfaces on project site	4.7	63.5	3.6	51.4	-1.1	77
Total area	7.4		7.4		0.00	

Source: KPFF 2019.

KPFF (Cannon Design 2019), conducted a preliminary hydrologic analysis of pre- and post-project hydrographs at the downstream end of the project site for the 50- and 100-year 6-hour rainfall events. This analysis showed that the 50- and 100-year peak flows are both expected to increase by about 0.1 cubic feet per second (Table 8-2). To adequately control the increase in the 100-year peak flow, a storage volume of approximately 122 cubic feet (0.003 acre-feet) is required. The draft SWCP for the project shows 0.1 acres of area reserved for “biofiltration basins (plus another 0.05 acres for a flow-thru planter and bio-swale), with some room for additional expansion of those areas if needed. This area would be adequate to fit the required detention volume with slight expansion of the area or depth of these features. With incorporation of the modeled detention volume, the potential impact of increased imperviousness to downstream flooding would be *less than significant*.

**Table 8-2 Potential Increases in Peak Flow and Required Detention Volume**

Storm Event	Pre-Project Peak	Post-Project Peak	Post-Project Increase		Detention capacity required to match pre-project conditions	
	(cfs)	(cfs)	(cfs)	(%)	(cu.ft.)	(ac.ft.)
50-year	139.8	139.9	0.1	0.1	89	0.002
100-year	182.1	182.2	0.1	0.1	122	0.003

Source: Cannon Design 2019.

Under existing conditions, Cordilleras Creek flows into a headwall/debris rack structure just upstream of the project site, emptying to a 48-inch pipe that flows beneath the project site before discharging to the natural channel approximately 780 feet downstream. The proposed replacement mainline storm drain would run as a 48-inch pipe from a redesigned inlet structure for approximately 390 feet, then in a 60-inch culvert for another 390 feet before discharging at a redesigned outlet structure. Similarly, culverts currently intercept flow from a small northern tributary (draining to a 24-inch pipe) and from a tributary that enters from the west near the existing Youth Center (draining to a 30-inch culvert). The size of these storm drains would remain the same under post-project conditions (though the storm drain from the north drainage would be rerouted to intercept the mainline storm drain at a different location).

The post-project changes to the three main storm drains at the project site described above would result in a rerouting of the flow within the project site, and consolidation of flows at different points along the mainline culvert that flows beneath the site. However, because the size of the pipes at the inlet structures would not be increased and the flow volume conveyed from the upper watershed through the project site would not increase, and thus the potential of the culvert upgrades to affect downstream flooding is *less than significant*.

All treatment and detention facilities would require maintenance for the life of a development project to remain effective. Therefore, developers must also establish a dedicated funding responsibility for either the future owners of the land or a designated public entity. In its role as an MS4 operator and permit holder, the County of San Mateo is required to enforce these site design and water quality protection measures for all new and redevelopment projects within its jurisdiction. Lack of maintenance could result in significant impacts. Implementation of

Mitigation Measure HYD-1 would ensure that the Cordilleras detention facilities receive proper maintenance throughout the life of the project. The impact of the project on downstream flooding is reduced to *less than significant with mitigation incorporated*.

#### **8.3.3.3 Water Runoff Exceeding Capacity of Existing or Planned Stormwater Drainage Systems or Additional Sources of Polluted Runoff**

As discussed in EIR section 8.3.3.2, the proposed project would upgrade stormwater infrastructure in order to reduce the potential for flooding on the project site itself, through a redesigned inlet/debris-rack structure and expansion of the mainline culvert underneath the project site. Additional impervious surfaces at the project site, and the increased size of the mainline culvert beneath the site could increase peak flow downstream of the site, potentially contributing to capacity exceedance in downstream reaches. Constrained infrastructure is present in two sections in downstream reaches, at Alameda de las Pulgas and downstream of El Camino Real (two and three miles downstream, respectively), as evidenced by FEMA flood maps that show flooding in those areas during a 100-year storm event. Proposed on-site detention would maintain 50- and 100-year peak flow downstream of the site at pre-project conditions. Maintenance of the detention basins as identified in Mitigation Measure HYD-1 would ensure that the detention basins are functioning properly and capacities are maintained. The resulting impact on storm drainage system capacity would be *less than significant with mitigation incorporated*.

Sources of stormwater pollution are addressed in EIR section 8.3.2. There is expected to be a net benefit to stormwater quality downstream of the site with the addition of water quality BMPs at the site and the impact on water quality was found to be *less than significant*.

#### **8.3.4 Stormwater Runoff Water Quality Standards, Surface and Groundwater Quality**

Stormwater contaminants from the site may be present in the runoff that is discharged from both the construction and post-construction phase of the proposed project. The potential for site runoff to affect water quality and/or hydromodification is evaluated below.

##### **8.3.4.1 Surface Water Quality**

###### ***Construction Phase***

During construction, clearing, grading, and other activities would increase the potential for on-site erosion, potentially leading to increased turbidity and sedimentation in Cordilleras Creek on the project site and in downstream reaches. Sedimentation may degrade in-stream habitat and reduce flow capacity at downstream culverts and open channels, potentially inducing or exacerbating flooding. Other pollutants that might impact surface water quality during project construction include petroleum products (gasoline, diesel, kerosene, oil and grease), hydrocarbons from asphalt paving, paints, solvents, and litter.

Because the project would disturb more than one acre of land, the applicant is required to prepare a Stormwater Pollution Prevention Plan (SWPPP), per NPDES general construction permit requirements through the State Water Resources Control Board (SWRCB). The SWPPP would address potential erosion and sedimentation issues through a project-specific erosion control plan, as well as other best management practices (BMPs) to reduce the potential for spills and other contamination from on-site construction activities. Appropriate measures for control of sediment and other pollutants from construction sites are included in the “Construction Handbook of Best Management Practices” (CASQA 2015). The project SWPPP is likely to include, but is not limited to, the following BMPs related to construction water-quality impacts:

- If the entire site is not graded in a single operation, leave existing vegetated areas undisturbed until construction of improvements on each portion of the development site is ready to begin;
- Immediately re-vegetate or otherwise protect all disturbed areas from both wind and water erosion upon completion of grading;
- Collect stormwater runoff into stable drainage channels and/or small drainage basins to prevent the buildup of large, potentially erosive stormwater flows;
- Direct runoff away from all areas disturbed by construction;
- Use sediment ponds or siltation basins to trap eroded soils before runoff is discharged into on-site or off-site drainage culverts and channels;
- Install straw rolls, hay bales or other approved materials below all disturbed areas adjacent to Cordilleras Creek to prevent eroded soils from entering the stream channel. Maintain these facilities until all disturbed upslope areas are fully stabilized;
- To the extent possible, schedule major site development work involving excavation and earthmoving for construction during the dry season;
- Develop and implement a program for the handling, storage, use, and disposal of fuels and hazardous materials. The program shall also include a contingency plan covering accidental hazardous material spills;
- Avoid cleaning, fueling, or maintaining vehicles on-site, except in an area designated to contain and treat runoff; and
- After construction is completed, inspect all drainage facilities immediately downstream of the grading site for accumulated sediment, and clear these facilities of debris and sediment as necessary.

A preliminary Erosion Control Plan (ECP) has been prepared for the proposed project (Appendix B, Sheets C1301 to C1306, C1308) as part of the planning process. The ECP details areas and locations where stormwater inlet protection, filter bags, fiber rolls, silt fence, and hydroseed will be used to limit the potential for sediment and other contaminants to enter the storm drain and/or creek channel. Additionally, in compliance with the requirements of the statewide NPDES Construction General Permit, the County or its qualified SWPPP developer will prepare a SWPPP for submittal with a Notice of Intent to the RWQCB prior to the start of construction. The SWPPP would specify BMPs to be employed during the construction phase to control sediment loads and pollutants (e.g., Appendix B, Sheet C1308). The SWPPP shall include the minimum BMPs required for the identified Risk Level of the project and receiving waters. BMP implementation shall be consistent with the BMP requirements in the most recent version of the California Stormwater Quality Association Construction BMP Handbook (CASQA 2015) or the Caltrans Stormwater Quality Handbook Construction Site BMPs Manual. Proper implementation of the project-specific SWPPP would reduce the potential construction-related water quality impacts to a *less-than-significant* level. No further mitigation is required.

### ***Operational Phase***

The proposed Cordilleras Health System Replacement Project would replace and increase the impervious surfaces within the sub-watershed, including new access roads, driveways, parking areas, sidewalks, and rooftops. Roads and parking lots are prone to contributing oil, grease, metal

brake dust, and trash to stormwater runoff. While roof runoff does not typically contribute stormwater contaminants at levels as high as from parking areas, driveways, and access roads, there is still some contribution from airborne deposition of particulate matter. In addition, the driveways, roads, and associated stormwater drainage system provide an efficient conveyance system for other potential contaminants, including fertilizers and pesticides, to the receiving stream. Untreated, the above contaminant sources are likely to adversely impact water quality in Cordilleras Creek and downstream water bodies.

Stormwater runoff within the existing facility predominantly drains directly to the existing site storm drain system and then to Cordilleras Creek, with effectively no facilities specifically intended for stormwater quality treatment<sup>18</sup>. Under post-project conditions, all stormwater discharge from impervious surfaces, including roof, roadway, sidewalk and hardscape would be treated in biofiltration basins, flow-through planters, or bioswales that meet SMCWPPP water quality treatment requirements. These facilities would be located, for the most part, within and/or adjacent to the large open area at the center of the proposed complex. Additional treatment facilities are planned adjacent to the entry road and adjacent parking areas, as project grades would not allow the central treatment facilities to collect stormwater runoff from these areas.

A preliminary Storm Water Control Plan (SWCP) was prepared for the project, highlighting drainage management areas (DMAs) and proposed water quality treatment features associated with each (Appendix B, Sheet C1401). With optimized controls (combination flow-volume treatment criteria), the estimated area needed for stormwater runoff water quality treatment is 0.13 acres with a control volume of 0.06 acre-feet. The designated areas provided for stormwater quality treatment is 0.15 acres and would be sufficient to meet estimates for required water quality treatment measures. The treatment features would be located within larger landscaped areas of the project site with sufficient room to expand and/or reconfigure the features should additional area be required or if final grading and drainage require additional treatment volume and/or features in alternate areas.

Increased runoff generated on the project site as a result of the increase in impervious surfaces would have the potential to result in hydromodification<sup>19</sup> in Cordilleras Creek and drainages downstream of the project site. The MRP requires projects to control for hydromodification effects of increased impervious surface area. To comply with this provision, the Cordilleras Health System Replacement Project is required to match pre-project discharge rates and durations from 10 percent of the 2-year storm up to the pre-project 10-year peak flow, following the specifications outlined in the MRP and the design guidelines included in the San Mateo County Hydromodification Management Plan (SMCWPPP 2005). The proposed project plans to meet all C.3 NPDES stormwater requirements using a bioretention facility (or facilities) within or adjacent to the central open space of the project site, as part of the water quality treatment bioretention basins described above (Appendix B, Sheet C1401).

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<sup>18</sup> Some paved surfaces, such as walkways and small rooftops may drain to vegetated areas that serve some water quality treatment function, but these were not explicitly included as such.

<sup>19</sup> Hydromodification is defined as the change in the natural hydrologic processes and runoff characteristics (i.e., interception, infiltration, overland flow, interflow and groundwater flow) caused by urbanization or other land use changes that result in increased erosive flows and changes in sediment transport, and thereby could result in water quality impacts.

Water quality treatment controls can be designed to incorporate hydromodification control, though the area required for such facilities is typically greater than for those designed solely for water quality treatment. The limited capacity for infiltration at the project site may require that facilities be designed to detain and release flows at rate below the threshold of erosion in the downstream channel (rather than infiltrating excess volume), potentially requiring additional control volume.

The project proposes bioretention to provide water quality treatment for all post-project impervious surfaces (3.8 acres), whereas the hydromodification management provision only requires treatment of the additional impervious surfaces (1.1 acres). Thus, the 0.15 acres of bioretention area reserved for water quality treatment in the project design is likely sufficient to meet both the water quality and hydromodification requirements, assuming appropriate sizing of the bioretention orifices and underdrains. Further, directing runoff from portions of the walkway area within the central open space to adjacent (non-bioretention) landscaped areas could provide additional stormwater runoff volume control and reduce the flows entering the bioretention treatment areas. Even if hydromodification management requires additional area, there is room to expand several of the areas reserved for stormwater treatment into adjacent landscaped meadow areas or add additional bioretention basins (see preliminary project SWCP; Appendix B, Sheet C1401).

The County or its contractor would prepare a stormwater control plan to control and treat post-construction stormwater runoff as specified in Provision C.3 of the MRP. Appropriate controls may include the following:

- Site design measures that reduce the amount of impervious surfaces and/or direct runoff away from impervious surfaces to vegetated areas;
- Source controls that prevent contact of potential pollutants with rainfall and stormwater runoff;
- Stormwater treatment measures designed to remove contaminants from stormwater runoff; and
- Hydromodification management measures designed to reduce excess erosive flows resulting from increased impervious areas.

Documentation would be required once final designs are completed in order to verify compliance with the water quality and hydromodification provisions. Implementation of a stormwater control plan in compliance with the MRP would reduce surface water quality impacts to a ***less-than-significant*** level. No further mitigation is required.

#### **8.3.4.2 Groundwater Quality**

As discussed in the Environmental Setting section above, the low-infiltration soils at the site provide limited opportunity for groundwater recharge, and the existing infiltration that does occur at the site does not contribute to an aquifer that is of regional significance. The stormwater treatment BMPs discussed above are intended to maximize infiltration, assuming infiltration rates are sufficient and that depth to the seasonal groundwater peak elevation meets the performance/design standards of the BMPs. If not, underdrains may be required. Under either scenario, the BMPs are expected to meet water quality treatment standards as required under Provision C.3 of the MRP.

The low-infiltration soils at the site provide limited opportunity for groundwater recharge, and the existing infiltration that does occur at the site does not contribute to an aquifer that is of regional significance. The stormwater treatment BMPs discussed above are intended to maximize infiltration, assuming infiltration rates are sufficient and that depth to the seasonal groundwater peak elevation meets the performance/design standards of the BMPs. If not, underdrains may be required. Under either scenario, the BMPs are expected to meet water quality treatment standards.

In addition, there are no known sources of potential groundwater contamination at the site that would be at risk of increased rate of mobilization through concentrated recharge of stormwater. As such potential project impact to groundwater quality would be *less than significant*.

### 8.3.5 Release of Pollutants due to Project Inundation

As discussed previously, the on-site drainage system (separate from the Cordilleras Creek culvert) would be sized to accommodate a 10-year 1-hour rainfall event, in compliance with San Mateo County's design standards, and the mainline storm drain underneath the site would be sized to accommodate the 100-year, 6-hour rainfall event, reducing the potential for flooding at the project site relative to existing conditions. (See EIR section 8.3.3.2 for additional analysis flooding issues.)

The upper Cordilleras Creek watershed, above the project site, is a steep canyon, and is prone to occasional mudflows and landslides, as is typical for sites throughout the Coast Range. Immediately upstream of the project site is a relatively wide portion of Cordilleras Creek, with evidence of past sediment deposition. A debris rack/grate is present at the upstream end of the mainline culvert, and a secondary rack is present approximately 200 feet. These facilities, along with the general lower slope of the creek through this reach, would help slow and/or contain debris flow deposits prior to affecting the facility. Thus, the project site would have similar or lessened (due to the upgraded inlet and culvert) potential for debris flow inundation, and the potential impact for release of contaminants as a result of such inundation is considered *less than significant*.

### 8.3.6 Water Quality Plan and Groundwater Management Plan

The proposed project is located in the headwaters of Cordilleras Creek, which ultimately drains to the San Francisco Bay, which are both included in the San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan; SFRWQCB 2017). The project would implement stormwater quality BMPs consistent with the NPDES stormwater permit, and as such would not conflict or obstruct the implementation of the Basin Plan. *No impact* would occur.

The proposed project is not located within the boundaries of a groundwater basin as defined by the California Department of Water Resources. Flow from the site, discharges to Cordilleras Creek, which flows eastward toward the San Francisco Bay, and thus is tributary to the area defined as the San Mateo Plain subbasin of the Santa Clara Valley groundwater basin. As discussed in EIR section 8.3.2, the project site is not located within an area of significant recharge and consists of soils with generally low infiltration capacity. The project would also only slightly increase the impervious area at the site, with the upper watershed remaining as designated open space and park land. For these reasons, the development proposed at the project site would not conflict with or obstruct implementation of a sustainable groundwater management plan. *No impact* would occur.



### 8.3.7 Surface and Groundwater Quality

As discussed in EIR section 8.3.2, the project would implement bioretention ponds and potentially other LID treatment measures to treat stormwater runoff from impervious surfaces and meet NPDES permit requirements. Stormwater runoff from the existing site drains directly to the site storm drain system and then to Cordilleras Creek with no treatment BMPs. As such stormwater runoff quality from the site is likely to improve under post-project conditions and the potential impact to surface water quality would be *less than significant*.

Potential impacts to groundwater quality are also discussed in EIR section 8.3.2. With appropriate design of bioretention ponds, any infiltration to local groundwater that might occur within these features would receive appropriate treatment and the impact groundwater quality would be *less than significant*.

### 8.3.8 Increased Impervious Surfaces and Associated Increased Runoff

The proposed project would increase impervious surfaces at the site by 1.1 acres, with 0.5 additional acres of roof area, and 0.6 additional acres of pavement (including parking lots, driveways, and paved walkways). Potential impacts of this increase related to water quality and hydromodification are addressed in EIR section 8.3.2. Implementation of the stormwater control plan in compliance with C.3 requirements of the MRP specified by the SMCWPPP would reduce this impact to *less than significant*. No additional mitigation is required.

As discussed in EIR section 8.3.3.2, the 1.1 additional acres of impervious surfaces proposed at the site would slightly increase peak flow from the site during a 100-year event by as much as 0.1 cfs. Incorporation of the detention storage volume associated with the biofiltration basin would reduce this impact to *less than significant*.

## 8.4 CUMULATIVE IMPACTS

The cumulative context to assess project impacts includes development within the Cordilleras watershed and in the vicinity of the project site. The watershed is used as the geographic unit for cumulative analysis based on the concept that many water quality problems, like the accumulation of pollutants or nonpoint source pollution, are best addressed at the watershed level. In addition, California's regulatory framework for protection of water quality focusses on the watershed. Much of the lower portion of the Cordilleras watershed is already heavily- to moderately-urbanized, while most of the upper portion of the watershed is park and open space unlikely to experience any significant development.

### 8.4.1 Water Quality

The proposed project could, in conjunction with other projects within the watershed, contribute urban runoff pollutants to downstream receiving waters, resulting in degradation of water quality in Cordilleras Creek, and eventually the San Francisco Bay. The proposed project would incorporate LID and stormwater treatment measures, per NPDES requirements, to control and/or treat stormwater runoff. Similarly, other developments within the watershed would be required to comply with these regulations. Because the existing facility includes no such stormwater treatment measure, the proposed project would likely improve stormwater quality relative to existing conditions, even with the proposed small increases in impervious area. As such the cumulative impact of the project related to water quality would be *less than significant*.

### 8.4.2 Flooding

Increases in impervious area at the proposed project site could incrementally increase stormwater flows which, combined with similar increases due to other potential future projects within the watershed, could cumulatively impact flooding in downstream reaches. The proposed project would incorporate stormwater detention to provide no net increase in peak flows for the 50- and 100-year storm events, and would ensure that detention areas in the final design are sized to account for the increase in capacity proposed for the mainline culvert that carries Cordilleras Creek flow underneath the project site. In addition, as part of the project's compliance with the NPDES stormwater permit, the project would incorporate LID and stormwater treatment measures designed to maximize infiltration and evapotranspiration of stormwater runoff, minimizing increases in runoff for smaller storms. As such the cumulative impact of the project related to flooding would be *less than significant*.

## 8.5 MITIGATION MEASURES

**Impact HYD-1:** The new Cordilleras Creek drainage system conveying creek flows through the project site and detention basins proposed to control stormwater runoff from new impervious surfaces on the project site could contribute to on or off-site flooding if not properly maintained.

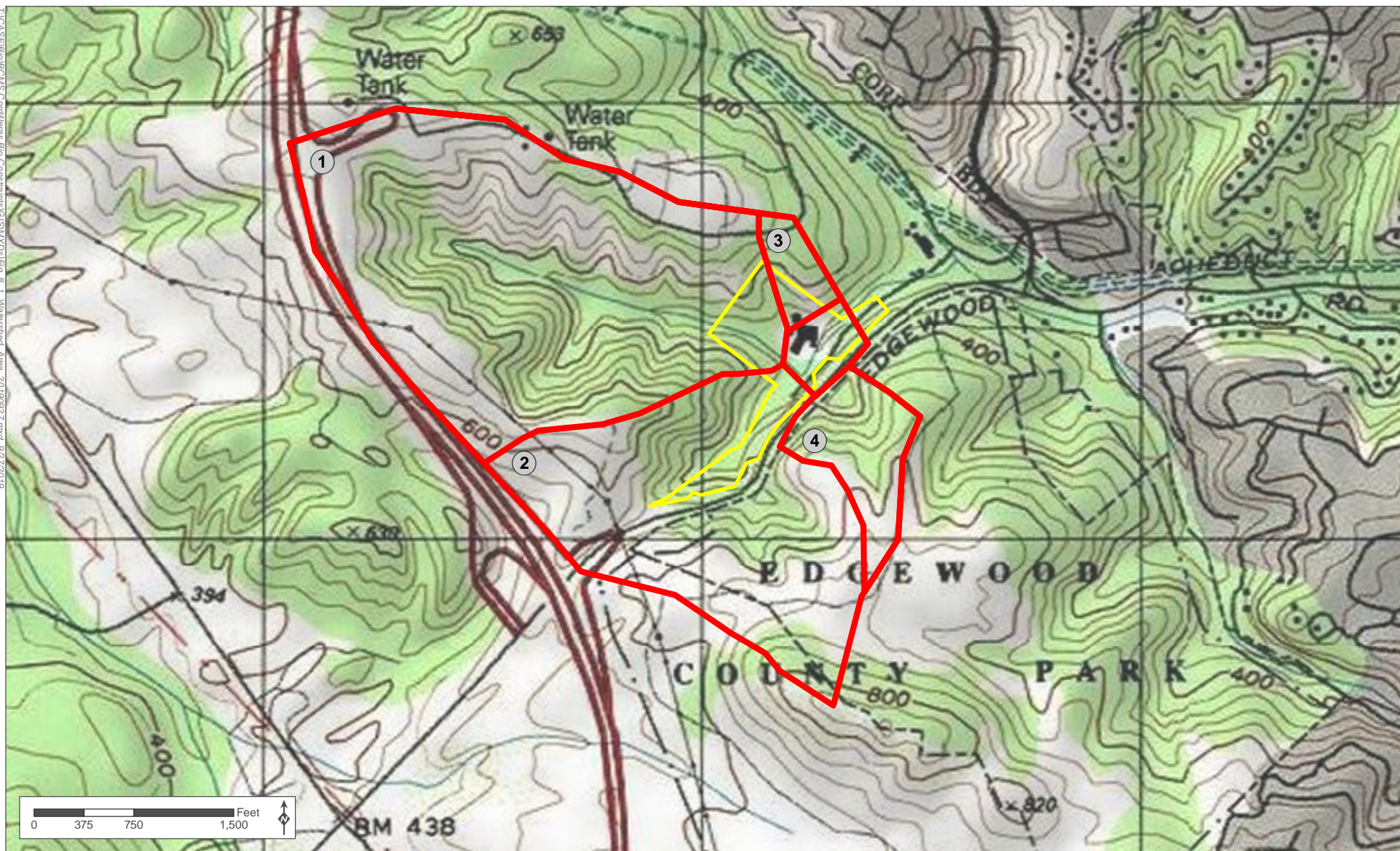
**Mitigation Measure HYD-1:** Over the life of the project, the County or its Contractor shall maintain the Cordilleras Creek drainage lines to continuously provide flow capacity for a 100-year, 6-hour storm event. All detention facilities shall be maintained to continuously provide the required volume storage in a 10-year, 1-hour storm event, and shall include a financing mechanism to ensure that the required maintenance will be performed. The maintenance plan shall specify how frequently the facilities shall be inspected, and shall include stormwater detention basins, the debris rack(s) upstream of the project site, and the mainline culvert that carries Cordilleras Creek flow beneath the project site.

**Effectiveness:** *Maintenance of the proposed drainage system improvements would ensure the system functions at design capacities for stormwater flow and storage volume. This would minimize the potential for on-site flooding and downstream flooding of Cordilleras Creek. Establishing a funding mechanism would ensure that the required maintenance would be performed.*

**Implementation:** *San Mateo County or its Contractor.*

**Timing:** *Final drainage plan shall be submitted to County Department of Public Works for approval prior to County issuance of grading permit.*

**Monitoring:** *County Department of Public Works shall review and approve final drainage plans prior to issuance of grading permit. The County Department of Public Works shall establish a maintenance plan prior to project occupancy.*

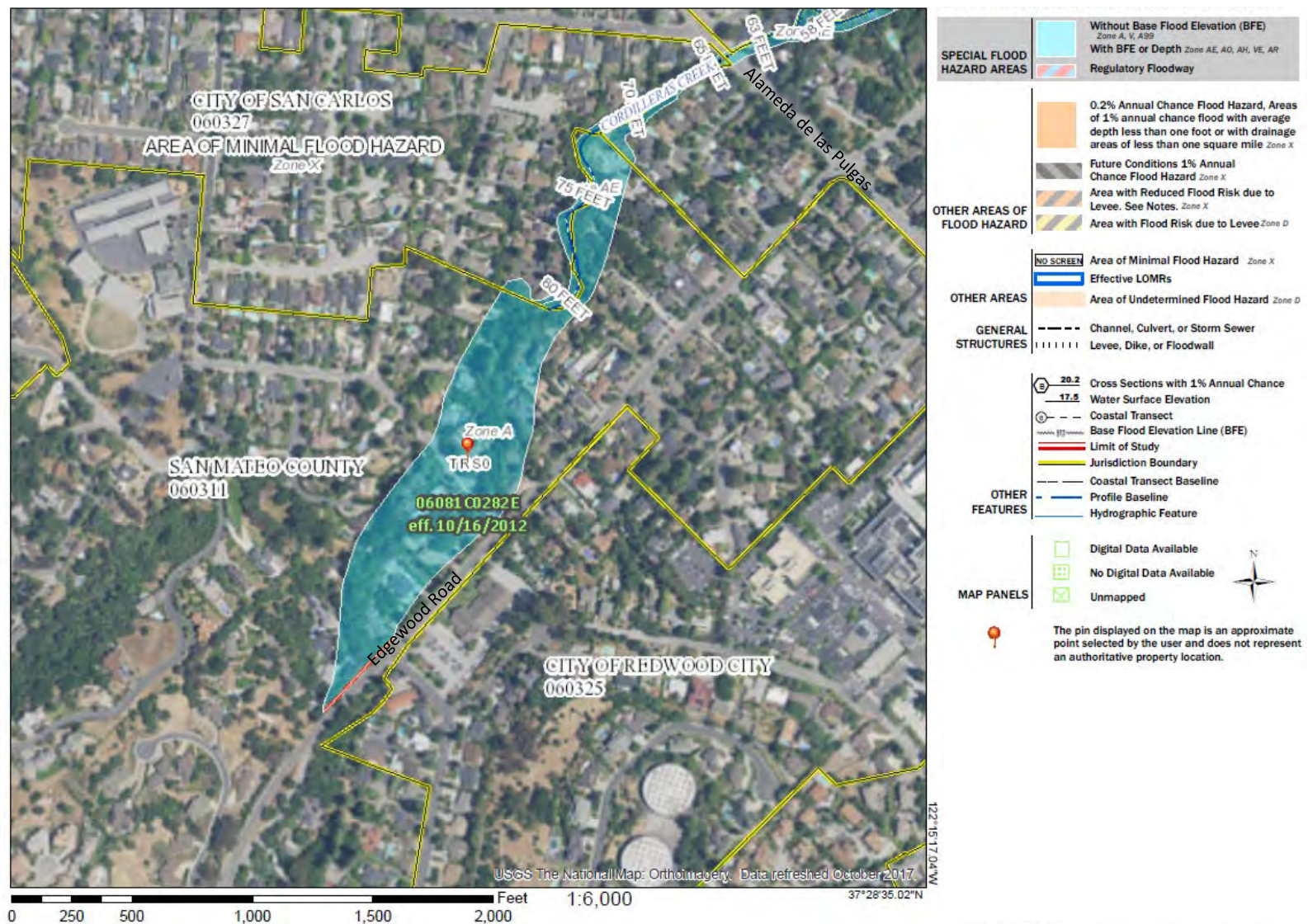


Source: ESRI 2017; San Mateo County 2015; MIG 2019

Watershed area  Property boundary

- 1: 143.6 acres
- 2: 87.3 acres
- 3: 6.7 acres
- 4: 17.6 acres

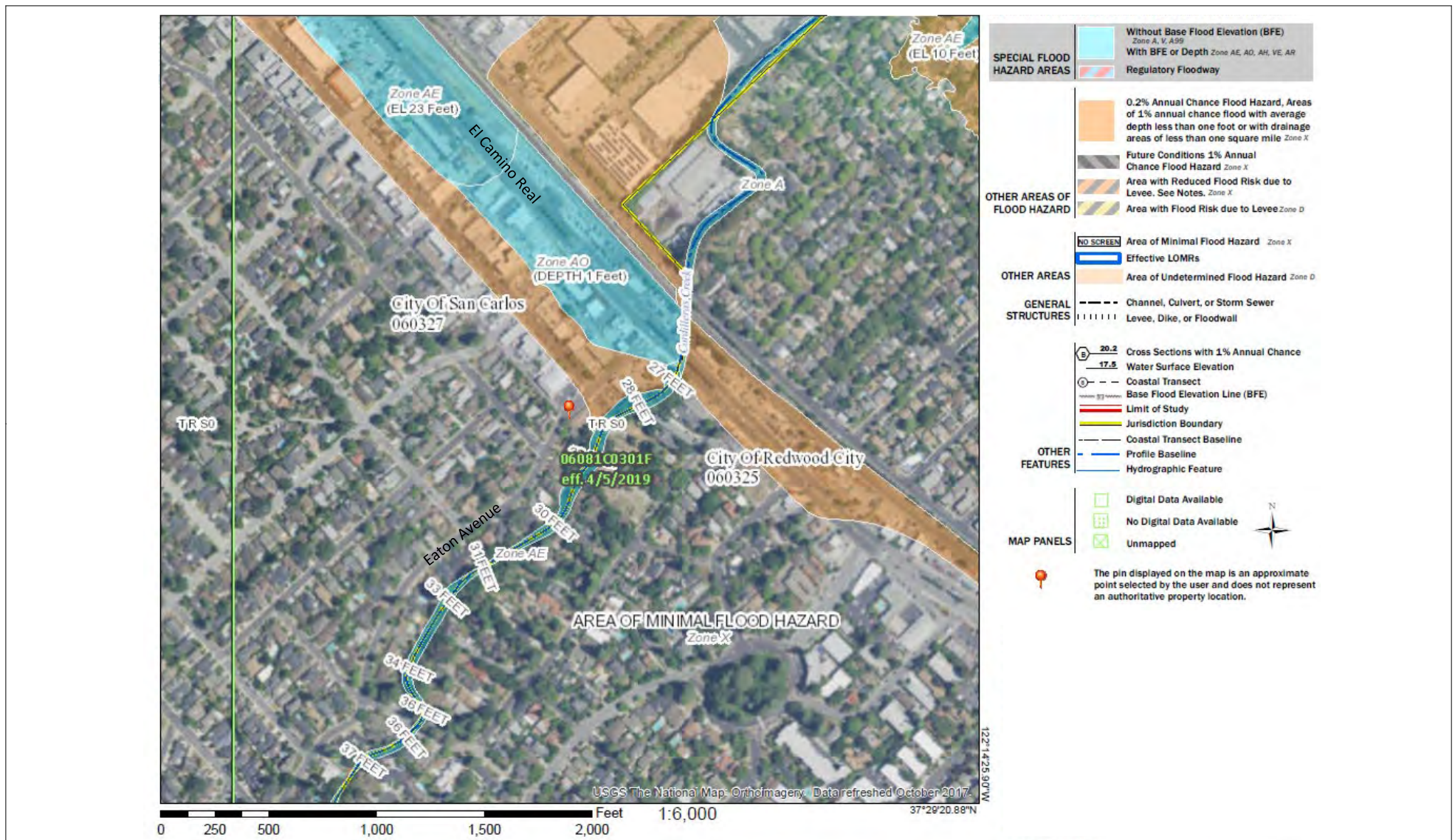




Source: FEMA website (<https://msc.fema.gov/portal/home>), 2019

**Figure 8-2a National Flood Hazard Map**  
Cordilleras Mental Health Center Replacement Project





Source: FEMA website (<https://msc.fema.gov/portal/home>), 2019

**Figure 8-2b National Flood Hazard Map**  
Cordilleras Mental Health Center Replacement Project

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## CHAPTER 9 NOISE

### 9.1 REGULATORY SETTING

#### 9.1.1 Federal Transit Administration

No federal regulations apply to noise or vibration from the proposed project, but the Federal Transit Administration's (FTA) 2018 Transit Noise and Vibration Impact Assessment document sets a ground-borne vibration annoyance criterion of 72 VdB for residences and buildings where people normally sleep. This standard is for "frequent" events occurring more than 70 times per day, such as a rapid transit project. The standards for "occasional" events (occurring between 30 to 70 times per day) and "infrequent" events (occurring less than 30 times per day) are 75 VdB and 80 VdB, respectively. The FTA's vibration annoyance criteria for institutional land uses with primarily daytime uses is 75 VdB for frequent events, 78 VdB for occasional events, and 83 VdB for infrequent events.

#### 9.1.2 California Department of Transportation

The California Department of Transportation' (Caltrans) *Transportation and Construction Vibration Guidance Manual* provides a summary of vibration criteria that have been reported by researchers, organizations, and governmental agencies (Caltrans 2013a). Chapters six and seven of this manual summarize vibration detection and annoyance criteria from various agencies and provide Caltrans' recommended guidelines and thresholds for evaluating potential vibration impacts on buildings and humans from transportation and construction projects. These thresholds are summarized in Table 9-1 and Table 9-2.

<b>Table 9-1 Caltrans' Vibration Threshold Criteria for Building Damage</b>		
<b>Structural Integrity</b>	<b>Maximum PPV (in/sec)</b>	
	<b>Transient</b>	<b>Continuous</b>
Extremely fragile buildings, ruins, monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some older buildings	0.50	0.25
Older residential structures	0.50	0.30
New residential structures	1.00	0.50
Modern industrial and commercial structures	2.00	0.50
Source: Caltrans 2013a		
Note: PPV = peak particle velocity		

<b>Table 9-2 Caltrans' Vibration Threshold Criteria for Human Response</b>		
<b>Human Response</b>	<b>Maximum PPV (in/sec)</b>	
	<b>Transient</b>	<b>Continuous</b>
Barely perceptible	0.035	0.012
Distinctly perceptible	0.24	0.035
Strongly perceptible	0.90	0.10
Severely perceptible	2.00	0.40
Source: Caltrans 2013a		
Note: PPV = peak particle velocity		

### 9.1.3 California Noise Insulation Standards (CCR Title 24)

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for multi-family residential buildings (Title 24, Part 2, California Code of Regulations). The noise insulation standards set forth an interior standard of 45 dBA – Ldn or CNEL – for any habitable room. The regulations also specify that acoustical studies must be prepared whenever a residential building or structure is proposed to be located near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, and where such noise source or sources create an exterior CNEL (or Ldn) of 60 dBA or greater. Such acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or Ldn) of 45 dBA or below (California's Title 24 Noise Standards, Chap. 2-35).

Part 11 of Title 24 is known as the California Green Building Code (CalGreen). Section 5.507, Environmental Comfort, establishes interior noise level standards for non-residential structures. Section 5.507.4.2 establishes a performance standard of 50 dBA for non-residential interior hourly Leq noise levels.

### 9.1.4 San Mateo County

The County of San Mateo has adopted standards to regulate noise levels within the County's jurisdiction. These goals, policies, and ordinances are enforced through the implementation of the County's General Plan and Noise Ordinance.

#### 9.1.4.1 San Mateo County General Plan

The San Mateo County General Plan provides guidelines for new sensitive land use developments and establishes goals and policies to protect its residents. It is a County objective to strive toward an environment for all County residents that is free from unnecessary, annoying, and injurious noise.

Table N-1 and N-2 contained in the Noise Element provide guidelines for noise sensitive land-use compatibility and outdoor activities, respectively. For residential land uses, as well as hotels, hospitals, and schools, noise levels are considered "Normally Acceptable" up to 59 Ldn, "Conditionally Acceptable" between 60-70 Ldn, and "Normally Unacceptable" for anything in excess of 70 Ldn. Noise levels at parks, playgrounds, and multi-family open space (intended for the use and enjoyment of residents) is "Normally Acceptable" up to 65 Ldn and "Normally Unacceptable" for anything louder than that. The Noise Element does not establish land-use compatibility guidelines for commercial or office developments.



The following goal and policies identified in the Noise Element are applicable to the proposed project.

- **Goal 2: Minimize unnecessary, annoying, or unhealthful noise.**

Policy N 2.1: Noise Ordinance. Continue implementation and enforcement of the County's existing noise control ordinance: a) which prohibits noise that is annoying or injurious to neighbors of normal sensitivity, making such activity a public nuisance, and b) restricts the hours of construction to minimize noise impact.

Policy N 2.2: Minimize Noise Impact. Protect all "noise-sensitive" land uses in Tables N-1 and N-2 [of the Noise Element] from adverse impacts caused by the noise generated on-site by new developments. Incorporate necessary mitigation measures into development design to minimize noise impacts. Prohibit long-term exposure increases of 3 dB (Ldn) or greater at the common property line, or new uses which generate noise levels of 60 dB (Ldn) or greater at the property line, excluding existing ambient noise levels.

#### **9.1.4.2 San Mateo County Noise Ordinance**

In order to control unnecessary and excessive noise in the incorporated and unincorporated portions of the County of San Mateo, the Board of Supervisors approved the noise provisions outlined in Chapter 4.88 (Noise Control) of the San Mateo County Ordinance Code. Chapter 4.88 stipulates that noise sources associated with demolition, construction, repair, remodeling, or grading activity are exempt from the noise ordinance, provided the activities occur between the hours of 7:00 A.M. and 6:00 P.M. on weekdays, and 9:00 A.M. and 5:00 P.M. on Saturdays. Construction noise on Sundays, Thanksgiving, and Christmas is not exempt.

## **9.2 ENVIRONMENTAL SETTING**

### **9.2.1 Noise Definition and Sound Measurement**

Noise is generally defined as unwanted sound and is widely recognized as a form of environmental degradation. Airborne sound is the rapid fluctuation of air pressure above and below atmospheric pressure. The frequency (pitch), amplitude (intensity or loudness), and duration of a sound all contribute to the effect on a listener, or receptor, and whether or not the receptor perceives the sound as "noisy" or annoying.

Pitch is the height or depth of a tone or sound and depends on the frequency of the vibrations by which it is produced. Sound frequency is expressed in terms of cycles per second, or Hertz (Hz). Humans generally hear sounds with frequencies between 20 and 20,000 Hz and perceive higher frequency sounds, or high pitch noise, as louder than low-frequency sound, or sounds low in pitch. Sound intensity or loudness is a function of the amplitude of the pressure wave generated by a noise source combined with the reception characteristics of the human ear. Atmospheric factors and obstructions between the noise source and receptor also affect the loudness perceived by the receptor. Sound pressure levels are typically expressed on a logarithmic scale in terms of decibels (dB). A dB is a unit of measurement that indicates the relative amplitude (i.e., intensity or loudness) of a sound, with 0 dB corresponding roughly to the threshold of hearing for the healthy, unimpaired human ear.

Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 dBs represents a ten-fold increase in acoustic energy, while 20 dBs is 100 times more intense, 30 dBs is 1,000

times more intense, etc. In general, there is a relationship between the subjective noisiness or loudness of a sound and its intensity, with each 10 dB increase in sound level perceived as approximately a doubling of loudness. Due to the logarithmic basis, decibels cannot be directly added or subtracted together using common arithmetic operations:

$$50 \text{ decibels} + 50 \text{ decibels} \neq 100 \text{ decibels}$$

Instead, the combined sound level from two or more sources must be combined logarithmically. For example, if one noise source produces a sound power level of 50 dBA, two of the same sources would combine to produce 53 dB as shown below.

$$10 * 10 \log \left( 10^{\left(\frac{50}{10}\right)} + 10^{\left(\frac{50}{10}\right)} \right) = 53 \text{ decibels}$$

In general, when one source is 10 dB higher than another source, the quieter source does not add to the sound levels produced by the louder source because the louder source contains ten times more sound energy than the quieter source.

### 9.2.2 Sound Characterization

Although humans generally can hear sounds with frequencies between 20 and 20,000 Hz most of the sounds humans are normally exposed to do not consist of a single frequency, but rather a broad range of frequencies perceived differently by the human ear. In general, humans are most sensitive to the frequency range of 1,000–8,000 Hz and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. Instruments used to measure sound, therefore, include an electrical filter that enables the instrument's detectors to replicate human hearing. This filter, known as the “A-weighting” or “A-weighted sound level” filters low and very high frequencies, giving greater weight to the frequencies of sound to which the human ear is typically most sensitive. Most environmental measurements are reported in dBA, meaning decibels on the A-scale. See Table 9-3 for a list of common noise sources and their A-weighted noise levels.

Sound levels are usually not steady and vary over time. Therefore, a method for describing either the average character of the sound or the statistical behavior of the variations over a period of time is necessary. The continuous equivalent noise level (Leq) descriptor is used to represent the average character of the sound over a period of time. The Leq represents the level of steady-state noise that would have the same acoustical energy as the time-varying noise measured over a given time period. Leq is useful for evaluating shorter time periods over the course of a day. The most common Leq averaging period is hourly, but Leq can describe any series of noise events over a given time period.

Variable noise levels are the values that are exceeded for a portion of the measured time period. Thus, the L1, L10, L50, and L90 descriptors represent the sound levels exceeded 1%, 10%, 50%, and 90% of the time the measurement was performed. The L90 value usually corresponds to the background sound level at the measurement location.

When considering environmental noise, it is important to account for the different responses people have to daytime and nighttime noise. In general, during the nighttime, background noise levels are generally quieter than during the daytime but also more noticeable due to the fact that household noise has decreased as people begin to retire and sleep. Noise exposure over the course of an entire day is described by the day/night average sound level, DNL (or Ldn), and the community noise equivalent level, or CNEL, descriptors. Both descriptors represent the 24-hour noise exposure in a community or area. For DNL, the 24-hour day is divided into a 15-hour

daytime period (7 AM to 10 PM) and a 9-hour nighttime period (10 PM to 7 AM), and a 10 dB “penalty” is added to measure nighttime noise levels when calculating the 24-hour average noise level. For example, a 45 dBA nighttime sound level would contribute as much to the overall day-night average as a 55 dBA daytime sound level. The CNEL descriptor is similar to DNL, except that it includes an additional 5 dBA penalty for noise events that occur during the evening time period (7 PM to 10 PM). The artificial penalties imposed during Ldn and CNEL calculations are intended to account for a receptor’s increased sensitivity to noise levels during quieter nighttime periods.

<b>Table 9-3 Typical Noise Levels</b>		
<b>Common Outdoor Activities</b>	<b>Noise Level (dBA)</b>	<b>Common Indoor Activities</b>
	110	Rock Band
Jet flyover at 1,000 feet	105	
	100	
Gas lawn mower at 3 feet	95	
	90	
Diesel truck at 50 feet at 50 mph	85	Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noise urban area, daytime	75	
Gas lawnmower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area	65	Normal speech at 3 feet
Heavy traffic at 300 feet	60	
	55	Large business office
Quiet urban daytime	50	Dishwasher next room
	45	
Quiet urban nighttime	40	Theater, large conference room
Quiet suburban nighttime	35	
	30	Library
Quite rural nighttime	25	Bedroom at night
	20	
	15	Broadcast/recording studio
	10	
	5	
Typical threshold of human hearing	-0-	Typical threshold of human hearing
Source: Caltrans 2013b		

### 9.2.3 Sound Propagation

The energy contained in a sound pressure wave dissipates and is absorbed by the surrounding environment as the sound wave spreads out and travels away from the noise generating source.

The strength of the source is often characterized by its “sound power level.” Sound power level is independent of the distance a receiver is from the source and is a property of the source alone. Knowing the sound power level of an idealized source and its distance from a receiver, sound pressure level at the receiver point can be calculated based on geometrical spreading and attenuation (noise reduction) as a result of distance and environmental factors, such as ground cover (asphalt vs. grass or trees), atmospheric absorption, and shielding by terrain or barriers.

For an ideal “point” source of sound, the energy contained in a sound pressure wave dissipates and is absorbed by the surrounding environment as the sound wave spreads out in a spherical pattern and travels away from the point source. Theoretically, the sound level attenuates, or decreases, by 6 dB with each doubling of distance from the point source; however, the sound level at a receptor location can be modified further by additional factors. The first is the presence of a reflecting plane such as the ground. For hard ground, a reflecting plane typically increases A-weighted sound pressure levels by 3 dB. If some of the reflected sound is absorbed by the surface, this increase will be less than 3 dB. Other factors affecting the predicted sound pressure level are often lumped together into a term called “excess attenuation.” Excess attenuation is the amount of additional attenuation that occurs beyond simple spherical spreading. For sound propagation outdoors, there is almost always excess attenuation, producing lower levels than what would be predicted by spherical spreading. Some examples include attenuation by sound absorption in air; attenuation by barriers; attenuation by rain, sleet, snow, or fog; attenuation by grass, shrubbery, and trees; and attenuation from shadow zones created by wind and temperature gradients. Under certain meteorological conditions, like fog and low-level clouds, some of these excess attenuation mechanisms are reduced or eliminated due to noise reflection.

#### **9.2.4 Noise Effects**

Noise effects on human beings are generally categorized as:

- Subjective effects of annoyance, nuisance, and/or dissatisfaction;
- Interference with activities such as sleep, learning, or relaxing; and
- Physiological effects such as startling and hearing loss.

Most environmental noise levels produce subjective or interference effects; physiological effects are usually limited to high noise environments such as industrial manufacturing facilities or airports.

Predicting the subjective and interference effects of noise is difficult due to the wide variation in individual thresholds of annoyance and past experiences with noise; however, an accepted method to determine a person’s subjective reaction to a new noise source is to compare it to the existing environment without the noise source, or the “ambient” noise environment. In general, the more a new noise source exceeds the ambient noise level, the more likely it is to be considered annoying and to disturb normal activities.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels when exposed to steady, single-frequency (“pure-tone”) signals in the mid-frequency (1,000–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is

generally perceived as a doubling of loudness that would almost certainly cause an adverse response from community noise receptors.

### **9.2.5 Groundborne Vibration and Noise**

Vibration is the movement of particles within a medium or object such as the ground or a building. Vibration may be caused by natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or humans (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources are usually characterized as continuous, such as factory machinery, or transient, such as explosions.

As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency; however, unlike airborne sound, there is no standard way of measuring and reporting amplitude. Vibration amplitudes can be expressed in terms of velocity (inches per second) or discussed in dB units in order to compress the range of numbers required to describe vibration. Vibration impacts to buildings are usually discussed in terms of peak particle velocity (PPV) in inches per second (in/sec). PPV represents the maximum instantaneous positive or negative peak of a vibration signal and is most appropriate for evaluating the potential for building damage. Vibration can impact people, structures, and sensitive equipment. The primary concern related to vibration and people is the potential to annoy those working and residing in the area. Vibration with high enough amplitudes can damage structures (such as crack plaster or destroy windows). Groundborne vibration can also disrupt the use of sensitive medical and scientific instruments, such as electron microscopes.

Common sources of vibration within communities include construction activities and railroads. Groundborne vibration generated by construction projects is usually highest during pile driving, rock blasting, soil compacting, jack hammering, and demolition-related activities. Next to pile driving, grading activity has the greatest potential for vibration impacts if large bulldozers, large trucks, or other heavy equipment are used.

### **9.2.6 Existing Noise Environment**

The existing CMHC site is not considered to be located in a noise impacted area. The project site is adjacent to Edgewood Road and approximately 0.4 miles east of I-280; however, the surrounding topography shields the site from potential roadway traffic noise levels. The County's General Plan does not include up to date noise contour maps for Edgewood Road but based on contours available from the City of Redwood City General Plan, roadway traffic noise levels on Edgewood Canyon Road are assumed to be less than 60 CNEL (Redwood City 2010). The existing noise environment at the site would, therefore, be dominated by on-site operations associated with the CMHC, San Mateo County Fire Station 18, and Canyon Oaks Youth Center, which primarily include patient recreation activities and Fire Department equipment maintenance activities.

### **9.2.7 Noise Sensitive Receptors**

Noise sensitive receptors are buildings or areas where unwanted sound or increases in sound may have an adverse effect on people or land uses. The County's General Plan defines noise sensitive land uses as "uses most sensitive to noise intrusion including, but not limited to, residential and the following institutional uses: hospitals, schools and libraries" (San Mateo County 1986).

The land surrounding the Project is generally undeveloped; Pulgas Ridge Open Space Preserve borders the site to the north, east, and west. Edgewood Road and Edgewood Park and Natural Preserve border the site to the south. Portions of the Blue Oak Trail (in Pulgas Ridge Open Space

Preserve) are located adjacent to Edmonds Road and within approximately 350 feet of potential work areas. In addition, patients at the existing CMHC and Canyon Oaks Youth Center would remain on-site during construction and are considered noise sensitive receptors. There are no other neighboring sensitive receptors due to the relatively secluded nature of the facility.

## **9.3 PROJECT IMPACTS**

### **9.3.1 Thresholds of Significance**

Based on Appendix G of the CEQA Guidelines and the San Mateo County Initial Study Environmental Evaluation Checklist, the proposed project would have a significant noise and vibration impact if it would result in:

- (a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- (b) Generation of excessive ground-borne vibration or ground-borne noise levels.
- (c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted within two miles of a public airport or public use airport, exposure to people residing or working in the project area to excessive noise levels

### **9.3.2 Temporary Construction Noise Levels**

As explained in EIR section 2.5.1, CMHC patients in the MHRC and Co-Housing residential treatment programs would remain in the existing facilities while the new MHRC buildings and Co-Housing building are constructed, at which time the patients would be transferred to the new facilities. After all patients are relocated, the existing CMHC building would be demolished. CMHC patients, therefore, would be exposed to construction noise levels during all phases of construction. Staff at San Mateo County Fire Station 18, as well as patients at the Canyon Oak Youth Center, would also be exposed to construction noise during all phases of project construction. Fire Department staff are not considered sensitive receptors since construction activities would occur during the daytime only. Patients at the Canyon Oak Youth Center would be subjected to substantially lower noise levels than patients at the CMHC because the youth center is situated behind a hill and County Fire Station 18, which substantially shield the youth center from nearly all construction activities and associated construction noise; the youth center's outside recreation yard is further shielded by the youth center building itself.

The magnitude of potential construction noise impacts on existing CMHC patients would be dependent upon a number of project-specific factors that are not known at this time, including: proximity to specific patients, time of day construction activities are occurring, intervening barriers, construction intensity (e.g., number and type of construction equipment that is operating simultaneously), and the total duration of construction activities. In general, construction noise levels would be highest during Phase 1 (grading and trenching activities), Phase 2 (foundation work and building construction), and Phase 3 (existing building demolition) phases. According to the CalEEMod equipment list (confirmed by the County's construction contractor; Skanska 2019), bulldozers, excavators, and graders would be the largest pieces of equipment operating at the same time during these phases. A drill rig may also be required during foundation work activities. Table 9-4 summarizes the hourly Leq noise levels that would be generated by the operation of the typical construction equipment that would be present on site at different

distances. Construction equipment noise levels are provided at various distances using Caltrans and Federal Highway Administration (FHWA) published noise data.

<b>Table 9-4 Typical Construction Equipment Noise Levels (dBA)</b>								
<b>Equipment</b>	<b>Reference Noise Level at 50 Feet (L<sub>max</sub>)<sup>(A)</sup></b>	<b>Percent Usage Factor<sup>(B)</sup></b>	<b>Predicted Noise Levels (Leq) at Distance<sup>(C)</sup></b>					
			<b>10 Feet</b>	<b>20 Feet</b>	<b>50 Feet</b>	<b>75 Feet</b>	<b>100 Feet</b>	<b>125 Feet</b>
Backhoe	80	40	90	84	76	72	70	66
Bulldozer	85	40	95	89	81	77	75	71
Compact Roller	80	20	87	81	73	69	67	63
Crane	85	16	91	85	77	74	71	69
Delivery Truck	85	40	95	89	81	77	75	73
Excavator	85	40	95	89	81	77	75	73
Generator	82	50	93	87	79	75	73	71
Paver	85	50	96	90	82	78	76	74
Pneumatic tools	85	50	96	90	82	78	76	74
Tractor	84	40	114	108	80	76	74	92
Scraper	85	40	95	89	81	77	75	73
Sources: Caltrans 2013b and FHWA 2017.								
(A) L <sub>max</sub> noise levels based on manufacturer's specifications.								
(B) Usage factor refers to the amount of time the equipment produces noise over the time period.								
(C) Estimate does not account for any atmospheric or ground attenuation factors. Calculated noise levels based on Caltrans 2009: L <sub>eq</sub> (hourly) = L <sub>max</sub> at 50 feet – 20log (D/50) + 10log (UF), where: L <sub>max</sub> = reference L <sub>max</sub> from manufacturer or other source; D = distance of interest; UF = usage fraction or fraction of time period of interest equipment is in use.								

As shown in Table 9-4, the worst-case Leq and Lmax construction equipment noise levels are predicted to be approximately 82 and 85 dBA, respectively, at a distance of 50 feet from the equipment operating area. At an active construction site, it is not uncommon for two or more pieces of construction equipment to operate at the same time. The concurrent operation of two or more pieces of construction equipment would result in noise levels of approximately 86 Leq to 89 dBA Lmax at a distance of 50 feet from equipment operating areas<sup>20</sup>. During construction, noise levels would, in general, be highest on the western side of the existing CMHC (where most grading and new building construction activities would occur). Conversely, noise levels during demolition of the existing building would be highest on the eastern side of the new MHRC buildings.

<sup>20</sup> As shown in Table 9-4, a single bulldozer provides a sound level of 81 dBA Leq at a distance of 50 feet; when two identical sound levels are combined, the noise level increases to 84 dBA Leq and when three identical sound levels are combined, the noise level increases to 86 dBA Leq. These estimates assume no shielding or other noise control measures are in place at or near the work areas.

The magnitude of the project's temporary and periodic increase above ambient noise levels during construction would be dependent on the existing ambient noise levels, the nature of the construction activity (i.e., site preparation or building construction) the distance between the construction activity and the sensitive receptor / outdoor area, and the individual receptor's response to the construction noise level.

During active construction, patients would not have exterior access to areas near equipment operations, demolition activities, etc. and, therefore, would not be exposed to the highest potential construction noise levels occurring at the site. Interior noise levels would be attenuated by approximately 25 to 35 dBA with all windows and doors closed, which would result in interior noise levels of approximately 54 to 64 dBA in rooms fronting active construction areas<sup>21</sup>. These interior noise levels are generally below levels that are considered intrusive or excessive, and would not interfere with human speech; however, given the nature of the on-site facilities and receptors, it is possible that these noise levels may be conceived as intrusive by CMHC patients.

In general, the proposed project's construction activities have a low potential to result in significant noise levels for several reasons. First, as described in EIR section 2.6 of the Project Description, the County has incorporated BMPs into the project to minimize the potential adverse noise effects of the project on the CMHC. The BMPs identified in Table 2-4 include measures that:

- Limit when construction activities can occur (during daytime hours only, Monday to Saturday, consistent with the County Code);
- Require construction equipment to include noise attenuation devices (engine shields, mufflers, etc);
- Require staging areas and stationary construction equipment to be located as far away as possible from residential areas (i.e., patient "quiet areas").

In addition, as described in EIR section 2.5.5, the construction superintendent would, throughout the entire project, communicate on a daily basis with the County, Fire Station 18, Canyon Oaks Youth Center, and CMHC contacts details regarding the project schedule and key milestone dates, the safety and security program in place, and the logistics and impacts of the project. These measures would reduce the potential for construction noise levels to significantly intrude upon CMHC operations and patient care and well-being. Nonetheless, given the nature of the on-site facilities and receptors, it is possible that construction noise levels may temporarily and intermittently interfere with CMHC, Fire Station 18, or Canyon Oaks Youth Center operations, and or be conceived as intrusive by CMHC or Canyon Oaks Youth Center patients. To further reduce the low potential for construction activities to interfere with site operations and/or patient care and well-being, the County has incorporated Mitigation Measure NOI-1 into the project, which requires the County to take additional action to control noise levels if qualified mental

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<sup>21</sup> The U.S. Department of Housing and Urban Development (HUD) Noise Guidebook and supplement (2009a, 2009b) includes information on noise attenuation provided by building materials and different construction techniques. As a reference, a standard exterior wall consisting of 5/8-inch siding, wall sheathing, fiberglass insulation, two by four wall studs on 16-inch centers, and 1/2-inch gypsum wall board with single strength windows provides approximately 35 dBs of attenuation between exterior and interior noise levels. Increasing window space may also decrease attenuation, with a reduction of 10 dBs possible if windows occupy 30% of the exterior wall façade.



health staff observe repeated adverse patient reactions to construction noise levels that, in the opinion of qualified CMHC or Canyon Oaks Youth Center staff, are interfering with patient care and well-being. With the incorporation of this adaptive management approach to construction noise levels, this impact would be *less than significant with mitigation*.

### 9.3.3 Operational Noise Levels

Once constructed, the proposed CMHC replacement facilities would generate noise from an increase in vehicle parking activities, stationary sources of equipment such as the proposed back-up generator and increases in vehicle traffic on roadways. These potential impacts are described below.

#### 9.3.3.1 On-Site Noise Levels

The new CMHC facilities would include four, one-story residential buildings (9,700 sf each), one, four-story campus center building with residences on the upper three floors (35,000 sf), a basketball court, landscape garden, and outdoor meeting space. These new facilities would replace existing facilities and noise sources at the site. Since noise sources would be replaced, the proposed project would have little to no potential to change the existing noise environment at the site.

New buildings would include heating, ventilation, and air conditioning (HVAC) systems that would likely be constructed on top of all structures. These systems would be located on top of the building behind a parapet wall and would be shielded from adjacent buildings.

The proposed on-site, diesel-fueled, back-up generator would be installed near the Co-Housing building, within the proposed service yard. The generator would be regularly tested on a limited basis, approximately one hour per month, and would be capable of providing 12 hours back-up power for 80 percent of the electrical load of the entire facility. The generator would be located behind an enclosure and would not generate substantial noise levels at on-site facilities.

The proposed project would increase the number of full-time equivalent staff at the CMHC from 89 to 107. This increase in staff would result in additional vehicle parking activity at the site. The proposed parking areas for the new facilities would be located along the site's interior perimeter road. Staff parking would occur in shifts and would not result in significant noise generating activities, nor substantially change the existing ambient noise environment at the site.

For the reasons outlined above, potential on-site noise levels resulting from the proposed project would result in a *less-than-significant* impact.

#### 9.3.3.2 Off-Site Traffic Noise Levels

The Traffic Operational Study prepared for the project indicates the proposed project is anticipated to generate approximately 8 new (i.e., net) trips during the AM peak hour and 6 new trips during the PM peak hour (Hexagon 2019). Caltrans considers a doubling of total traffic volume to result in a three dBA increase in traffic-related noise levels (Caltrans 2013b). A noise level of less than 3 dBA is typically not perceptible to the human ear in an outdoor environment. The proposed project would not result in a doubling of traffic volumes on any roadway segment and, therefore, would not result in significant increases in off-site traffic noise levels. This impact would be *less than significant*.

### 9.3.4 Groundborne Vibration

The construction of the proposed project would require the use of heavy construction equipment that could produce groundborne vibration. Once operational, development in the project area would not result in the use of equipment or machinery that could generate significant groundborne vibration. The following analysis evaluates if construction of the project would generate excessive groundborne vibration levels.

#### 9.3.4.1 Temporary Construction Vibration Levels

Construction activities have the potential to result in varying degrees of ground vibration, depending on the specific construction equipment used and activities involved. Vibration generated by construction equipment spreads through the ground and diminishes with increases in distance. The effects of ground vibration may be imperceptible at low levels, result in low rumbling sounds and detectable vibrations at moderate levels, and can disturb human activities such as sleep and vibration-sensitive equipment at high levels. Ground vibration can also potentially damage the foundations and exteriors of existing structures even if it does not result in a negative human response.

The location of the project's construction work areas are, in general, in close proximity to existing and proposed CMHC facilities (within 25 feet), Fire Station 18 (within 25 feet), and the Canyon Oaks Youth Center (within 60 feet). The groundborne vibration levels generated by the type of equipment that would be used to construct the project are shown in Table 9-5. Potential construction source vibration levels were using reference vibration levels documented and contained in the FTA's Transit Noise and Vibration Impact Assessment document and Caltrans' Transportation and Construction Vibration Guidance Manual (Caltrans 2013a and FTA 2018).

<b>Table 9-5 Estimated Project Construction Groundborne Vibration Levels</b>								
<b>Equipment</b>	<b>Peak Particle Velocity (in/sec) <sup>(A)</sup></b>				<b>Velocity Decibels (VdB) <sup>(B)</sup></b>			
	<b>10 feet</b>	<b>20 feet</b>	<b>60 feet</b>	<b>100 feet</b>	<b>10 feet</b>	<b>20 feet</b>	<b>60 feet</b>	<b>100 feet</b>
Large bulldozer	0.244	0.114	0.034	0.019	98.9	89.9	75.6	68.9
Small bulldozer	0.082	0.038	0.011	0.007	69.9	60.9	46.6	39.9
Loaded truck	0.208	0.097	0.029	0.017	97.7	88.9	74.6	67.9
Jackhammer	0.096	0.045	0.013	0.008	90.7	81.9	67.6	60.9
Auger Drill Rig	0.244	0.114	0.034	0.019	98.9	89.9	75.6	68.9
Sources: Caltrans 2013a and FTA 2018. (A) Estimated PPV calculated as: $PPV(D) = PPV(ref) * (25/D)^{1.1}$ where $PPV(D)$ = Estimated PPV at distance; $PPV(ref)$ = Reference PPV at 25 ft; $D$ = Distance from equipment to receiver; and $n$ = ground attenuation rate (1.1 for dense compacted hard soils). (B) Estimated $L_v$ calculated as: $L_v(D) = L_v(25 \text{ feet}) - 30 \log(D/25)$ where $L_v(D)$ = estimated velocity level in decibels at distance, $L_v(25 \text{ feet})$ = RMS velocity amplitude at 25 f; and $D$ = distance from equipment to receiver.								

As shown in Table 9-5, specific vibration levels associated with typical construction equipment are highly dependent on the type of equipment used. For human responses, the maximum groundborne vibration levels for a large bulldozer, which is likely to be required during multiple phases of construction, would be below the FTA's threshold of annoyance for institutional land

uses of 78 VdB (see EIR section 9.1.1) and Caltrans' threshold for a barely perceptible vibration level (for transient sources) of 0.035 PPV (see Table 9-2) at the Canyon Oaks Youth Center (60 feet away at closest); they would also not exceed Caltrans' threshold for building damage for modern industrial and commercial structures of 2.0 PPV (see Table 9-1). At distances less than 50 feet away, vibration levels from most construction equipment could be barely perceptible to CMHC patients and Fire Station 18 staff; however, vibration levels would not result in building damage.

Although groundborne vibration from construction activities may be perceptible at CMHC facilities and Fire Station 18, this impact would be infrequent and short in duration (lasting a few hours or days as equipment would not operate in the same location for a prolonged amount of time), would not damage buildings or structures, and would, therefore, not be excessive. Nonetheless, given the nature of the on-site facilities and receptors, it is possible that construction vibration levels may temporarily and intermittently interfere with CMHC or Canyon Oaks Youth Center operations, and or be conceived as intrusive by CMHC or Canyon Oaks Youth Center patients. To further reduce the low potential for construction activities to interfere with site operations and/or patient care and well-being, the County has incorporated Mitigation Measure NOI-1 into the project, which requires the County to take additional action to control noise levels if qualified mental health staff observe repeated adverse patient reactions to construction vibration levels that, in the opinion of qualified CMHC or Canyon Oaks Youth Center staff, are interfering with patient care and well-being. With the incorporation of this adaptive management approach to construction vibration levels, this impact would be *less than significant with mitigation*.

### 9.3.5 Airport-Related Noise Hazards

The CMHC site is not located within 2 miles of any public or private airport or airstrip, or a planning area associated with an existing airport land use plan. The closest airport to the project site is San Carlos Airport, located approximately 3.4 miles northwest of the site. Although noise generated from aircraft fly overs may contribute to the local, ambient noise environment it is not in excessive. The project, therefore, would not expose people working or residing at the site area to excessive airport-related noise levels. This impact would be *less than significant*.

## 9.4 CUMULATIVE IMPACTS

The proposed project would generate noise and vibration during construction that would be abated by BMPs and Mitigation Measure NOI-1. There are no other development projects in the immediate vicinity of the CMHC site that would be undertaken at the same time as the proposed project. The project, therefore, does not have the potential to result in cumulative noise or vibration impacts. There is *no* cumulative impact.

## 9.5 MITIGATION MEASURES

**Impact NOI-1:** Project construction activities would occur in close proximity to the occupied mental health facility (CMHC) and could generate noise and vibration levels that interfere with mental health service operations and/or patient care and well-being.

**Mitigation Measure NOI-1:** To reduce potential construction noise and vibration impacts on mental health service operations, the County shall require the construction contractor to:

- Apply noise attenuation materials to windows of existing CMHC building windows to reduce construction noise in the building interior used for patient care.
- Provide CMHC and Canyon Oaks Youth Center contacts a three-week look ahead schedule to keep the Canyon Oaks Youth Center and CMHC informed of potential construction activities and noise levels.
- Regularly (i.e., on a daily or weekly basis) coordinate with staff from the Canyon Oaks Youth Center and CMHC on staff observations regarding patient care, response to construction noise and vibration effects, and overall well-being.
- Take actions to reduce construction noise and vibration levels if staff from the Canyon Oaks Youth Center or CMHC observe repeated adverse patient reactions to construction noise and vibration levels that interferes with mental health service operations or operating goals. Such actions may include:
  - Construction activity management techniques, such as phasing activities to take advantage of shielding/attenuation provided by topographic features or buildings, or coordinating with mental health staff to conduct most impactful noise generating construction activities at times that may be less intrusive;
  - Additional construction equipment controls such as use of electric equipment instead of combustion equipment when feasible;
  - Use of temporary sound barriers (equipment enclosures, berms, walls, blankets, or other devices) to reduce noise levels at impacted patient care areas; or
  - Monitoring of actual construction levels to verify sound levels and potential noise attenuation benefits of any of the above measures.

***Effectiveness:***      *Coordination with appropriate mental health staff and adaptive management of construction noise and vibration levels would ensure construction activities do not interfere with mental health services or patient care and well-being.*

***Implementation:***      *The County shall incorporate this mitigation measure into all appropriate engineering and site plan (e.g., building, grading, etc.) documents.*

***Timing:***                *During construction activities.*

***Monitoring:***          *The County shall review all engineering and site plan documents for inclusion of this requirement.*

## **CHAPTER 10 TRANSPORTATION**

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### **10.1 REGULATORY SETTING**

#### **10.1.1 City / County Association of Governments of San Mateo County**

The City/County Association of Governments (C/CAG) of San Mateo County, as the Congestion Management Agency for San Mateo County, is required to prepare and adopt a Congestion Management Program (CMP) on a biennial basis. The purpose of the CMP is to identify strategies to respond to future transportation needs, develop procedures to alleviate and control congestion, and promote countywide solutions. The 2013 CMP, which was developed to be consistent with the Metropolitan Transportation Commission (MTC) Transportation 2035 Plan, provides updated program information and performance monitoring results for the CMP roadway system.

#### **10.1.2 CEQA Guidelines**

The updated CEQA Guidelines, effective on December 28, 2018, state that automobile delay, as measured by level of service (LOS), will no longer constitute a significant environmental impact under CEQA, and that vehicle mile traveled (VMT) is considered the most appropriate metric to evaluate a project's transportation impacts. Local agencies have until July 2020 to adopt the new policy that establishes the thresholds and procedures for evaluating transportation impacts based on VMT.

The County of San Mateo has not yet adopted any thresholds or guidelines related to VMT. However, the County has been requiring projects to study VMT for CEQA purposes and using the 15 percent below the regional average VMT as a threshold of significance. This is further discussed in EIR section 10.4.1 below.

### **10.2 TRAFFIC IMPACT ANALYSIS METHODOLOGY**

#### **10.2.1 Scope of Analysis**

A traffic study was conducted by Hexagon (2019) for the purpose of identifying the potential traffic impacts related to the proposed development. The potential impacts of the project were evaluated in accordance with the standards set forth by the County of San Mateo and the City/County Association of Governments (C/CAG) of San Mateo County CMP. A County Congestion Management Program (CMP) analysis was not required because the project would add fewer than 100 peak-hour trips to any CMP roadways (I-280) designated by the C/CAG. According to the County of San Mateo Traffic Impact Study Requirements, a traffic impact report is generally needed if a project would generate over 500 trips per day or over 100 trips during the peak hour.

Because the proposed CMCH Replacement Project would result in an increase of less than 100 peak-hour vehicle trips, a CMP traffic impact analysis was not deemed necessary. Hexagon conducted a traffic operations analysis to quantify the number of trips and VMT generated by the project and to identify any potential traffic operational issues that could occur as a result of the proposed project. A review of the site plan was also conducted to evaluate traffic operations at the project entrance, on-site circulation, and bicycle and pedestrian access.

### 10.2.2 Assessed Traffic Conditions

The data required for the analysis were obtained from new traffic counts and field observations. Collected data includes existing intersection peak-hour volumes and lane configurations.

Traffic conditions at the study intersections were analyzed for the weekday AM and PM peak hours of traffic. In the study area, the AM peak hour typically occurs between 7:00 AM and 9:00 AM, while the PM peak hour typically occurs between 4:00 PM and 6:00 PM.

Traffic conditions were evaluated for the following scenarios:

- Existing Conditions. Existing traffic conditions reflect existing traffic volumes on the existing roadway network. Existing traffic volumes were obtained from recent traffic counts.
- Existing plus Project Conditions. Existing plus project traffic volumes were estimated by adding to existing traffic volumes the trips associated with the proposed development. Existing plus project conditions were evaluated relative to existing conditions in order to determine the effects the project would have on the existing roadway network.
- Near-Term Cumulative plus Project Conditions. Near-term cumulative plus project conditions reflect 5-year projected traffic volumes plus the project. Near-term cumulative plus project traffic volumes were estimated by factoring a one percent growth for the next 5 years to the existing traffic volumes and adding the trips associated with the proposed development. Near-term cumulative plus project conditions were evaluated relative to cumulative no-project conditions in order to determine the effects of the project.

### 10.2.3 Intersection Level of Service Methodology

Traffic conditions at the study intersections were evaluated using level of service (LOS). Level of Service is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays.

The study evaluates three unsignalized intersections. Levels of service at the unsignalized intersections were based on the 2010 Highway Capacity Manual methodology using Synchro software. For stop-controlled intersections, level of service depends on the average delay experienced by vehicles on the stop-controlled approaches. Thus, for two-way or T-intersections, operations are defined by the average control delay experienced by vehicles entering the intersection from the stop-controlled approaches on minor streets or from left-turn approaches on major streets. The correlation between average control delay and LOS for unsignalized intersections is shown in Table 10-1.

The County of San Mateo does not have a level of service standard for unsignalized intersections. Therefore, intersection levels of service for unsignalized intersections are reported for informational purposes only.

**Table 10-1 Unsignalized Intersection Level of Service Based on Average Delay**

Level of Service	Description	Average Delay Per Vehicle (Sec.)
A	Little or no traffic delay	10.0 or less
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	Greater than 50.0

Source: Transportation Research Board, *200 Highway Capacity Manual* (Washington, D.C., 2000) p17-2

## 10.3 ENVIRONMENTAL SETTING

### 10.3.1 Existing Roadway Network

Regional highway access to the project site is provided via Interstate 280 (I-280), and local roadway access to the project site is provided via Crestview Drive, Edgewood Road, and Edmonds Road. Descriptions of each roadway facility are presented below.

I-280 is an 8-lane north-south freeway that extends north through San Francisco and south through San Jose. Access to the project site is provided via its interchange with Edgewood Road.

Edgewood Road is a two-lane east-west arterial street within the project vicinity. It is a major access route between the central Peninsula area and I-280. The posted speed limit is 45 miles per hour (mph). Bike lanes are present on both sides of the street. There are no sidewalks on the street, and on-street parking is not allowed on the street in the project vicinity. Edgewood Road provides access to the project site via its intersection with Crestview Drive.

Crestview Drive is a three-lane north-south collector street (one travel lane in each direction and a center turn lane) within the project vicinity. It provides access to homes on the street and in the vicinity. The posted speed limit is 30 mph with sidewalks and on-street parking on both sides of the street. Crestview Drive provides access to the project via its intersection with Edmonds Road.

Edmonds Road is a two-lane east-west local street within the project vicinity. It extends between Crestview Drive and the project site. Edmonds Road provides direct access to the project site, a San Mateo County Fire Station, and the Canyon Oaks Youth Center located at the western terminus of the road. There is no posted speed limit on the road, but the travel speed is expected to be low given the narrow road width. There are no sidewalks on the road. On-street parking is not prohibited, but given the narrow road width, on-street parking is limited.

### 10.3.2 Bicycle and Pedestrian Facilities

Class II bicycle lanes (defined as on-street striped bike lanes) exist on Edgewood Road between Canada Road and Alameda de las Pulgas. There are no striped bike lanes or shared bike route signs on Crestview Drive or Edmonds Road in the project vicinity. On Crestview Drive, the wide striped shoulders that are used for on-street parking also can be used by cyclists. Edmonds Road carries low traffic volumes and is conducive to bicyclists.

Hexagon conducted bicycle counts at the study intersections and determined that bicycle volumes at all study intersections are consistently low. During the AM peak period, the westbound approach at the Crestview Drive and Edgewood Road intersection had the highest volume with 2 bicycles in the two-hour period. During the PM peak period, the eastbound approach at Crestview Drive and Edgewood Road intersection had the highest volume with 5 bicycles in the two-hour period.

Sidewalks are present on Crestview Drive from the north until Edmonds Road in the study area. There are no crosswalks present within the project vicinity. Hexagon conducted pedestrian counts at the study intersections, and there were no pedestrians present at the study intersections.

### 10.3.3 Transit Service

Local and regional transit service in San Mateo is provided by the San Mateo County Transit District (SamTrans). There is only one bus route (Route 295) serving the project area.

Route 295 provides service between the San Mateo Caltrain Station, the San Carlos Caltrain Station and the Redwood City Transit Center, with limited service to the Cordilleras Mental Health Center. This route stops at the project site once a day in each direction on weekdays: 4:32 PM northbound and 8:45 AM southbound.

### 10.3.4 Intersection Traffic Volumes and Levels of Service

Hexagon evaluated intersection levels of service under existing conditions based on peak-hour turning-movement counts collected on typical weekdays in May 2018. The intersection counts include motor vehicles, bicycles, and pedestrians. The existing lane configurations and traffic volumes at the study intersections are shown on Figure 10-1 Existing Lane Configuration and Existing Traffic Volumes. The I-280 ramp intersections on Edgewood road are stop-controlled on the off-ramp approach. The Crestview Drive/Edgewood Road intersection is stop-controlled for the southbound left-turn approach on Crestview Drive. There is a receiving lane on eastbound Edgewood Road for the left-turn vehicles to make two stage turns. The southbound right-turn approach on Crestview Drive is not stop-controlled, but the right-turning vehicles need to yield when merging with the westbound Edgewood Road traffic.

The results of the intersection level of service analysis (see Table 10-2 **Error! Reference source not found.**) show that the southbound left-turn at the Crestview Drive/Edgewood Road intersection operates at LOS F during the PM peak hour. The northbound off-ramp at the I-280/Edgewood Road intersection also operates at LOS F during the PM peak hour. Field observations of traffic operations and vehicle queuing at the intersections are described below.

<b>Table 10-2 Existing Intersection Levels of Service</b>					
<b>No.</b>	<b>Intersection</b>	<b>Peak Hour</b>	<b>Count Date</b>	<b>Avg. Delay (sec)</b>	<b>LOS</b>
1	I-280 Southbound Ramps and Edgewood Road	AM	05/23/18	25.1	D
		PM	05/23/18	23.6	C
2	I-280 Northbound Ramps and Edgewood Road	AM	05/23/18	30.7	D
		PM	05/28/18	72.3	F



3	Crestview Drive and Edgewood Road	AM	05/23/18	36.7	E
		PM	05/23/18	174.8	F
Note: Average delay is reported for the worst stop-controlled approach.					

### 10.3.5 Observed Traffic Conditions

Traffic conditions were observed in the field in order to identify existing operational deficiencies and to confirm the accuracy of calculated intersection levels of service. The purpose of this effort was to identify any existing traffic problems that may not be directly related to level of service, and to identify any locations where the level of service analysis does not accurately reflect existing traffic conditions.

Overall, the three study intersections on Edgewood Road operated adequately during the peak hours without the excessive vehicle queueing issues. Although the results of the level of service analysis indicate undesirable LOS F for the I-280 northbound off-ramp approach and the southbound left-turn Crestview Drive approach during the PM peak hour, field observations showed shorter delays. Field observations show that on the I-280 northbound off-ramp, vehicles generally were able to find a gap to turn on Edgewood Road quickly. At Crestview Drive, although the southbound left-turn vehicles often experienced some delay while waiting for a gap on Edgewood Road, the observed vehicle queue length was no more than three vehicles due to the low left-turn traffic (38 vehicles in the PM peak hour).

## 10.4 PROJECT IMPACTS

### 10.4.1 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines and the San Mateo County Initial Study Environmental Evaluation Checklist, the proposed project would have a significant traffic impact if it would:

- (a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, and parking;
- (b) Conflict or be inconsistent with CEQA Guidelines section 15064.3(b) Criteria for Analyzing Transportation Impacts;
- (c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- (d) Result in inadequate emergency access.

### 10.4.2 Conflict with a Program, Plan, Ordinance or Policy Addressing the Circulation System

The site plan shows adequate site access and on-site circulation, and no significant operational issues are expected to occur as a result of the project. The results of the intersection level-of-service analysis show that the added project trips would not degrade the levels of service of the study intersections and are not expected to result in a noticeable increase vehicle delay and queuing on the stop-controlled approaches. The project would provide adequate vehicle and bicycle parking spaces that meet the parking requirements specified by the County. As a result,

the project would not have an adverse effect on the circulation system, including transit, roadway, bicycle and pedestrian facilities, and parking. Therefore, the project would not conflict with an existing program, plan, ordinance or policy addressing the circulation system; **no impact** would occur.

#### 10.4.2.1 Effects on Traffic Operations

As discussed in EIR section 10.4.3, updated CEQA Guidelines provide that a project's effect on automobile delay shall not constitute a significant environmental effect. Nonetheless, an analysis is provided to assess the impact of the project on traffic operations for informational purposes. As shown below, increased vehicle trips associated with the project would not impair traffic operations at intersections nearest the project site.

#### ***Trip Generation***

Peak-hour vehicle trips generated by the Cordilleras Health System Replacement Project were estimated based on trip generation counts at the existing facility in May 2019. Trip generation for the proposed facility was estimated by factoring up the existing trips in accordance with the increase in the number of staff members in the morning and evening shifts. The proposed project trip generation estimates are presented on Table 10-3 **Error! Reference source not found..**

The existing facility generated 28 AM peak-hour trips and 29 PM peak-hour trips with 68 staff members in the morning shift and 21 staff members in the evening shift. The morning shift is generally from 7:00 AM to 3:30 PM, and the evening shift is generally from 3:00 PM to 11:30 PM. The trip generation rate for the AM peak hour is derived based on the 68 staff members in the morning shift, which calculates to 0.41 trips per staff ( $26/68 = 0.41$ ). In the PM peak hour, the outbound trip generation rate of 0.31 trips per staff ( $21/68 = 0.31$ ) was calculated based on the number of staff members in the morning shift because they mostly leave the facility during the peak-hour; while the inbound trip generation rate of 0.38 trips per staff ( $8/21 = 0.38$ ) was calculated based on the number of staff members in the evening shift.

The proposed facility would increase the number of staff members in the morning shift from 68 to 88, and is expected to generate a total of 28 trips (20 in and 8 out) during the AM peak hour and 29 trips (8 in and 21 out) during the PM peak hour.

Because the project would replace the existing Mental Health Center, trips associated with the existing use were subtracted from the project-generated traffic to derive the net site-generated trips. The project would generate 8 net trips (6 in and 2 out) during the AM peak hour and 6 net trips (0 in and 6 out) during the PM peak hour.

<b>Table 10-3 Project Trip Generation Estimates</b>							
<b>Land Use</b>	<b>Size</b>	<b>AM Peak-Hour Trips</b>			<b>PM Peak-Hour Trips</b>		
	<b>Number of Staff</b>	<b>In</b>	<b>Out</b>	<b>Total</b>	<b>In</b>	<b>Out</b>	<b>Total</b>
<u>Existing Use</u> Cordilleras Mental Health Center <sup>1</sup>	68 (morning shift)	20	8	28	8	21	29
	21 (evening shift)						

<u>Proposed Use</u> Expanded Cordilleras Mental Health Center <sup>2</sup>	88 (morning shift <sup>3</sup> )	26	10	36	8	27	35
	19 (evening shift)						
Net Project Trips (Proposed – Existing)		6	2	8	0	6	6
Notes: 1. Trip generation for existing use is based on peak period driveway counts conducted on May 14, 2019. 2. Trip generation for the new mental health center is based on factoring up the existing trips in accordance with the increase in the number of staff in the morning and evening shifts. The morning shift is generally from 7:00 AM to 3:30 PM and the evening shift is generally from 3:00 PM to 11:30 PM. 3. With the proposed use, the morning shift also includes the regular office hour shift from 8:00 AM to 5:00 PM.							

### ***Trip Distribution and Assignment***

The trip distribution pattern for the proposed development was estimated based on existing travel patterns on the surrounding roadway system and the locations of complementary land uses. The project trips were assigned to the roadway network based on the directions of approach and departure, the roadway network connections, and the locations of project driveways. The project trip distribution pattern and the net project trip assignment are both shown on Figure 10-2 Project Trip Distribution and Net Trip Assignment. The estimated net project trips were added to the existing and the near-term cumulative traffic volumes to derive the project conditions traffic volumes (see Figure 10-3 Project Conditions Traffic Volumes).

### ***Intersection Levels of Service and Traffic Operations***

The results of the intersection level of service analysis under project conditions (see Table 10-4) show that the added project trips would not degrade the levels of service of the study intersections and are not expected to result in a noticeable increase in vehicle delay on the stop-controlled approaches. At the Crestview Drive/Edgewood Road intersection during the PM peak hour, the southbound left-turn movement on Crestview Drive often experiences some delay during the PM peak hour. However, the vehicle queue length is short (no more than three vehicles) due to the low left-turn traffic (38 vehicles in the PM peak hour). Although the project trips would slightly increase the delay for the southbound left-turn movement, the vehicle queue length is not expected to increase because the project would add only one vehicle trip to the movement.

**Table 10-4 Project Intersection Levels of Service**

No.	Intersection	Peak Hour	Count Date	Existing				Near-Term Cumulative			
				No Project		With Project		No Project		With Project	
				Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS
1	I-280 Southbound	AM	05/23/18	25.1	D	25.5	D	30.3	D	30.7	D
		PM	05/23/18	23.6	C	23.6	D	28.4	D	28.4	D

	Ramps and Edgewood Road										
2	I-280 Northbound Ramps and Edgewood Road	AM	05/23/18	30.7	D	31.2	E	37.2	E	37.9	E
		PM	05/28/18	72.3	F	72.3	F	102.1	F	102.1	F
3	Crestview Drive and Edgewood Road	AM	05/23/18	36.7	E	37.5	E	43.0	E	44.1	E
		PM	05/23/18	174.8	F	179.4	F	>180	F	>180	F
Note: Average delay is reported for the worst stop-controlled approach.											

#### 10.4.2.2 Effects on Bicycle, Pedestrian, and Transit Facilities

The project is in a fairly remote and isolated location. There are no sidewalks and bicycle facilities along Edmonds Road connecting to the project site. There is only one bus route serving the project site with one southbound run in the morning and one northbound run in the afternoon on weekdays. Overall, the project site is not well served by pedestrian and bicycle facilities or transit services. However, given the type of facility and remote location, the project is not expected to create any demand for pedestrian and bicycle facilities or increased transit services. The site plan shows that the project would provide sidewalks and pedestrian pathways within the site that connect the new buildings and center courtyard.

#### 10.4.2.3 Effects on Vehicular Access and Circulation

Hexagon (2019) reviewed site access and on-site circulation on the project site plan (Life Safety – Site Plan; Appendix B, Sheet G0051) to determine the adequacy of the site's entrance road with regard to traffic volumes, delays, vehicle queues, geometric design, sight distance, and truck access. In general, the site plan shows adequate site access at the project entrance and circulation within the site.

##### ***On-Site Circulation***

The project would provide a two-way loop road within the site that connects the proposed buildings and surface parking areas to Edmonds Road with two access points/driveways on Edmonds Road. There would be another two driveways on Edmonds Road that provide access to a freight loading area and the South parking lot next to Building A. The loop road and the drive aisles within parking areas are shown to be 24 to 26 feet wide, which is adequate for two-way circulation of vehicular traffic and complies with the width requirement for two-way aisles.

The South Lot would provide 20 compact stalls with a dead-end drive aisle. The drive aisle would be 26 feet wide, which would provide drivers enough space to maneuver out of the dead-end aisle. Therefore, the dead-end aisle would not cause any circulation or safety issues.

The project would provide a passenger/delivery loading zone in front of each building. The loading zone for Building A would be 50 feet long and would fit two passenger vehicles or one bus. It is expected the existing bus route would use the loading zone to load passengers. The loading zones for Buildings B, C, D, and E would range 23 to 30 feet long and would fit one passenger vehicle or small truck. Based on the type of the facility, the proposed loading zones would provide adequate vehicle capacity.

### ***Freight Loading and Trash Collection***

A freight loading area would be provided next to Building A with a dimension of approximately 60 feet long by 20 feet wide. Trash bins for the building would also be located in the area. The driveway to the freight loading area is shown to be 20 feet wide. It is expected that trucks would be able to back in and head out of the loading area without issues.

A trash room would be located on the ground floor of Buildings B, C, D, and E. It is expected that trash bins for these buildings would be moved from the trash rooms to the designated staging area in front of each building on the internal loop road on garbage collection days.

### ***Sight Distance at Project Driveways***

The project entrances should be free and clear of any obstructions to optimize sight distance, thereby ensuring that exiting vehicles can see other vehicles traveling on Edmonds Road. There are no roadway curves, street parking, or landscaping features shown on the site plan that would obstruct the vision of exiting drivers. Therefore, sight distance would be adequate at the project entrances on Edmonds Road.

#### **10.4.2.4 Effects on Parking**

The project would provide 110 vehicular parking spaces (70 regular spaces, 34 compact spaces, and 6 accessible spaces) in a ground-level parking lot and 6 short-term bicycle parking spaces in the breezeway of Building A (Co-Housing).

According to the parking rates specified in the San Mateo County Zoning Regulations, Section 6119, the project is required to provide 108 vehicle parking spaces (see Table 10-5). Therefore, the proposed parking supply would meet the County's parking requirements.

Per the California Building Code Table 11B-208.2, five (5) accessible parking spaces are required and one (1) van accessible stall is required. Therefore, the project is required to provide a total of six (6) ADA spaces. The project site plan shows that there are 6 accessible stalls, one of which is van accessible.

<b>Table 10-5 Vehicular Parking Spaces Requirement</b>						
<b>Land Use</b>	<b>Parking Rate<sup>1</sup></b>	<b>Project Size</b>		<b>Required Spaces</b>		
		<b>Building A (Co-Housing)</b>	<b>Building B, C, D, E (MHRC)</b>	<b>Building A</b>	<b>Building B, C, D, E</b>	<b>Total Spaces</b>
Convalescent Homes, Skilled Nursing Facilities, Hospitals	One for each 5 beds	57 units	64 units	12	13	25
Medical or Dental Clinics, Banks, Business Offices, Professional Offices	One for each 200 square-foot floor area	8540 s.f.	7960 s.f.	43	40	83
<b>Total</b>				<b>55</b>	<b>53</b>	<b>108</b>
Notes:						
1. Vehicular parking requirements per Section 6119 of the San Mateo County Zoning Regulations						

Per the 2016 CalGreen, Section 5.106.5.3.3, seven stalls are required to be designated for Electric Vehicle Charging for 101-150 provided spaces. The project site plan shows 11 clean air vehicle spaces and 7 EV charging stalls.

The 2016 CalGreen (Section 5.106.4) requires a project to have five percent of vehicular parking spaces for short-term bicycle parking spaces. The 2016 CalGreen requires long-term bicycle parking for buildings with tenant spaces. Based on the bicycle parking requirements, the project would be required to provide six short-term and no long-term parking spaces. The current site plan shows that six short-term bicycle parking spaces would be provided in the breezeway of Building A, which would comply with the bicycle parking requirements.

#### **10.4.3 Consistency with CEQA Guidelines Criteria for Analyzing Transportation Impacts**

According to CEQA Guidelines section 15064.3(a), “VMT is generally the most appropriate measure of transportation impacts. It defines VMT as the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in Criterion 2, below (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact.”

CEQA Guidelines section 15064.3(b) lists the following criteria for analyzing transportation impacts:

- (1) Land Use Projects. VMT exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease VMT in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.
- (2) Transportation Projects. Transportation projects that reduce, or have no impact on, VMT should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in CEQA Guidelines section 15152.
- (3) Qualitative Analysis. If existing models or methods are not available to estimate the VMT for the particular project being considered, a lead agency may analyze the project's VMT qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
- (4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's VMT, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's VMT and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate VMT and any revisions to model outputs should be documented and explained in the environmental document prepared for the project.

Average daily VMT for the project area and the Bay Area can be estimated using the MTC's VMT database, which includes the forecasted VMT for each transportation analysis zone (TAZ) in urbanized areas in the Bay Area. The VMT database provides two types of VMT forecasts: the average daily VMT per worker based on location of work and the average daily VMT per resident based on location of residence. Because most VMT would be generated by the project's employees, the work-related VMT is used to evaluate the project's VMT impact.

San Mateo County requires projects to assess VMT using a threshold of significance of 15 percent below the regional average VMT. The forecasted daily VMT per worker is 21.80 daily VMT for the Bay Area for year 2020 based on the MTC's VMT database. Therefore, the significant threshold is 18.53 daily VMT per worker.

The CMHC project site is in a fairly remote location outside of urban boundaries and is not included in a TAZ in the MTC VMT database. Therefore, the VMT for the project was estimated using the TAZ (#1454) for the Palomar Park neighborhood just east of the site. It is expected that the worker-related VMT generated by the project area is similar to the VMT generated by the Palomar Park area. The forecasted daily VMT per worker is 30.96 for the project area, which exceeds the VMT threshold of 18.53.

Because the new Cordilleras facility would provide the same service as the existing facility, the VMT is expected to be similar to the existing facility, and there would be no increase or decrease in project VMT per worker. The new facility would increase the number of staff members from 68 to 88 in the morning shift and decrease the number of staff members from 21 to 19 in the evening shift. The 18 new employees would also expect to generate 30.96 VMT per worker, which exceeds the County's VMT significance threshold. Therefore, the project would result in a significant impact.

The County implements Transportation Demand Management (TDM) measures to reduce VMT and associated GHG emissions. These TDM measures encourage employees to carpool, take transit these measures (see EIR section 3.3.2). Given the location of the facility, staffing shift requirements, and the limited high-quality mass transit service in the project area, there are no feasible mitigation measures to reduce the project VMT from 30.96 to 18.53 (a 40 percent reduction). Therefore, the transportation impact would be *significant and unavoidable*.

#### **10.4.4 Increase Hazards Due to a Geometric Design Feature or Incompatible Uses**

The project does not include dangerous sharp curves or dangerous intersections as part of the project design. The roadways within the project site are not part of a normal public route, and would only be used by visitors, staff, and people working at or delivering to the facility. The project would not modify Edmonds Road, where the project site ingress/egress points are located. There would be *no impact* to hazards due to a geometric design feature or incompatible uses,

#### **10.4.5 Emergency Access**

The project includes provisions for emergency access including a 26-foot-wide emergency access loop road, and a turnout halfway up between the MHRCs and the water tank site on the 12-foot wide graveled road to allow for fire truck access (Life Safety – Site Plan; Appendix B, Sheet G0051). As such, there would be sufficient access for emergency vehicles, and the project would have *no impact* to emergency access.

## 10.5 CUMULATIVE IMPACTS

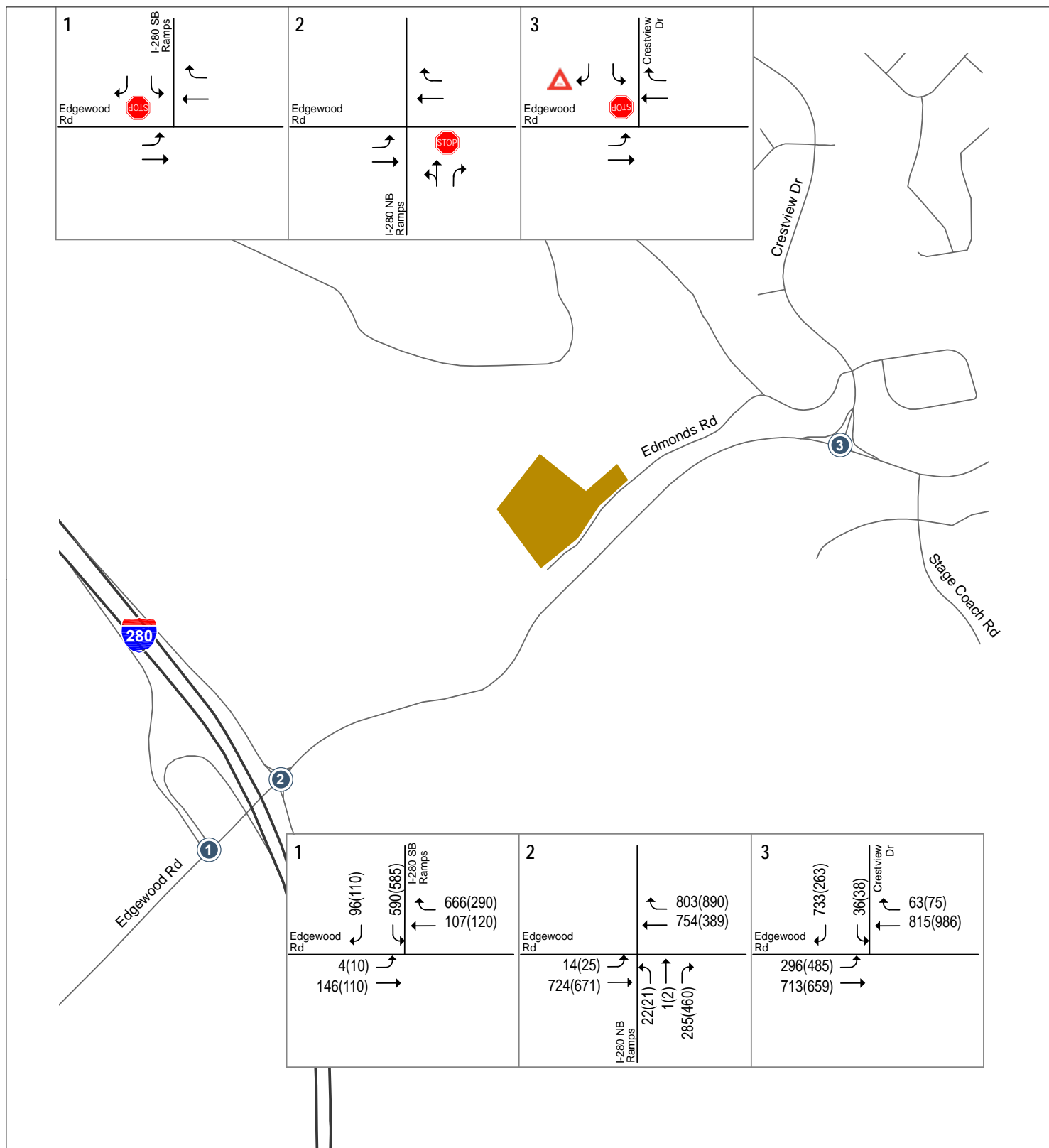
The proposed project has impacts from exceeding the calculated daily average VMT threshold by a significant margin. No mitigation is deemed available to reduce this impact to a less than significant level. Because this impact is inextricably linked with the project, it is not mitigatable on a wider, regional, scale. By exceeding the daily VMT threshold, the project would contribute to regional traffic congestion. Thus, the project would have a *significant and unavoidable* cumulative impact.

## 10.6 MITIGATION MEASURES

**Impact TRA-1:** The proposed project would add 18 new employees to an area of the County where VMT per worker (30.96) exceeds the MTC regional daily average VMT for the Bay Area workers (21.80). As a result, the new employees at Cordilleras project would generate VMT at a rate that exceeds the County's significance threshold, which is 15% less than the daily regional average VMT (18.53 miles per worker).

There are no feasible mitigation measures to reduce the project VMT from 30.96 to 18.53 (a 40 percent reduction) given the shift nature of CMHC employees, the CMHC distance from urban centers, and the absence of high-quality major mass transit stops. The increase in VMT above the regional average is significant and unavoidable.





Source: Hexagon Transportation Consultants, Inc., 06/07/2019

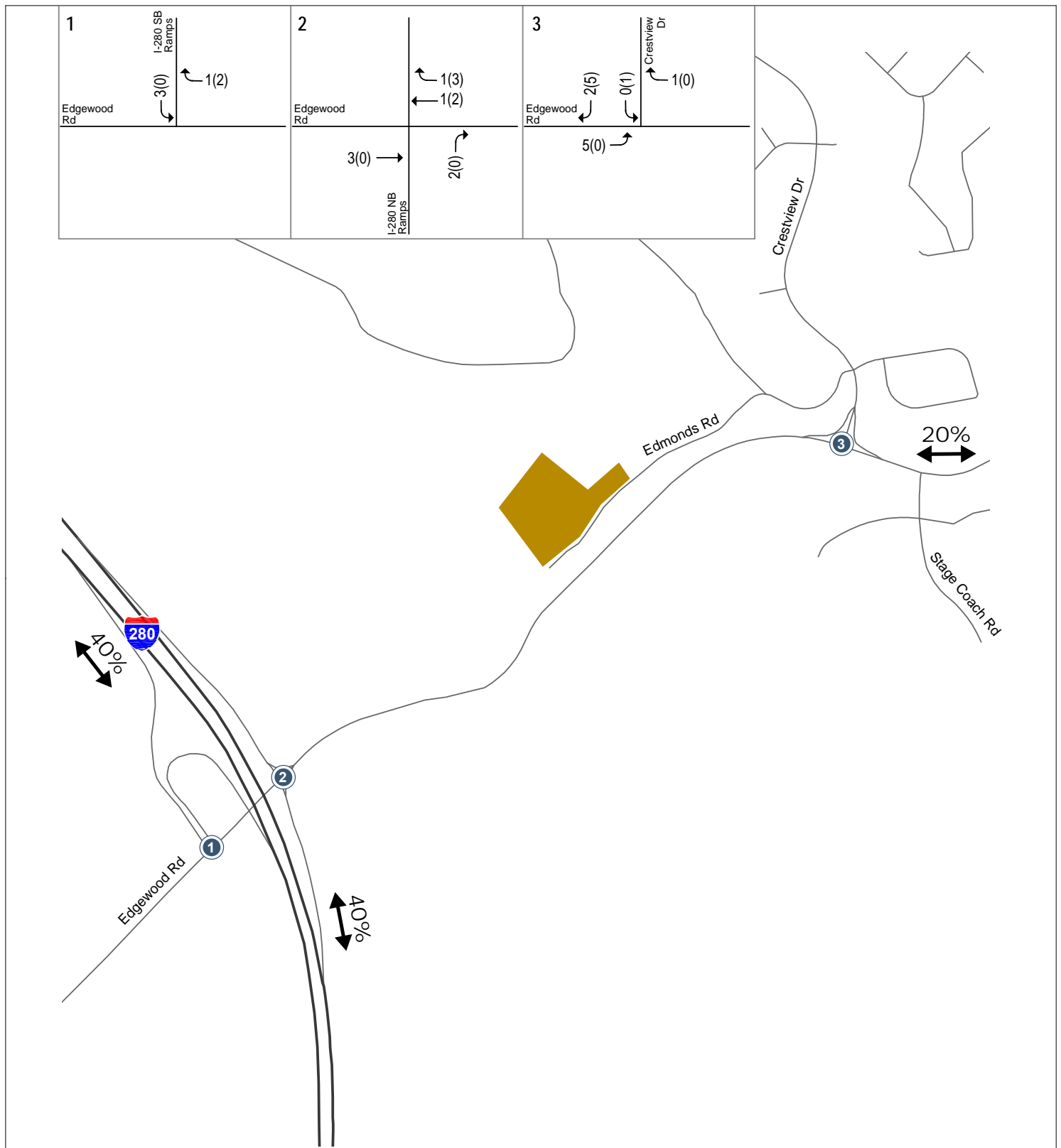
LEGEND

= Site Location

= Study Intersection



**Figure 10-1 Existing Lane Configuration and Existing Traffic Volumes**



Source: Hexagon Transportation Consultants, Inc., 06/07/2019

**LEGEND**

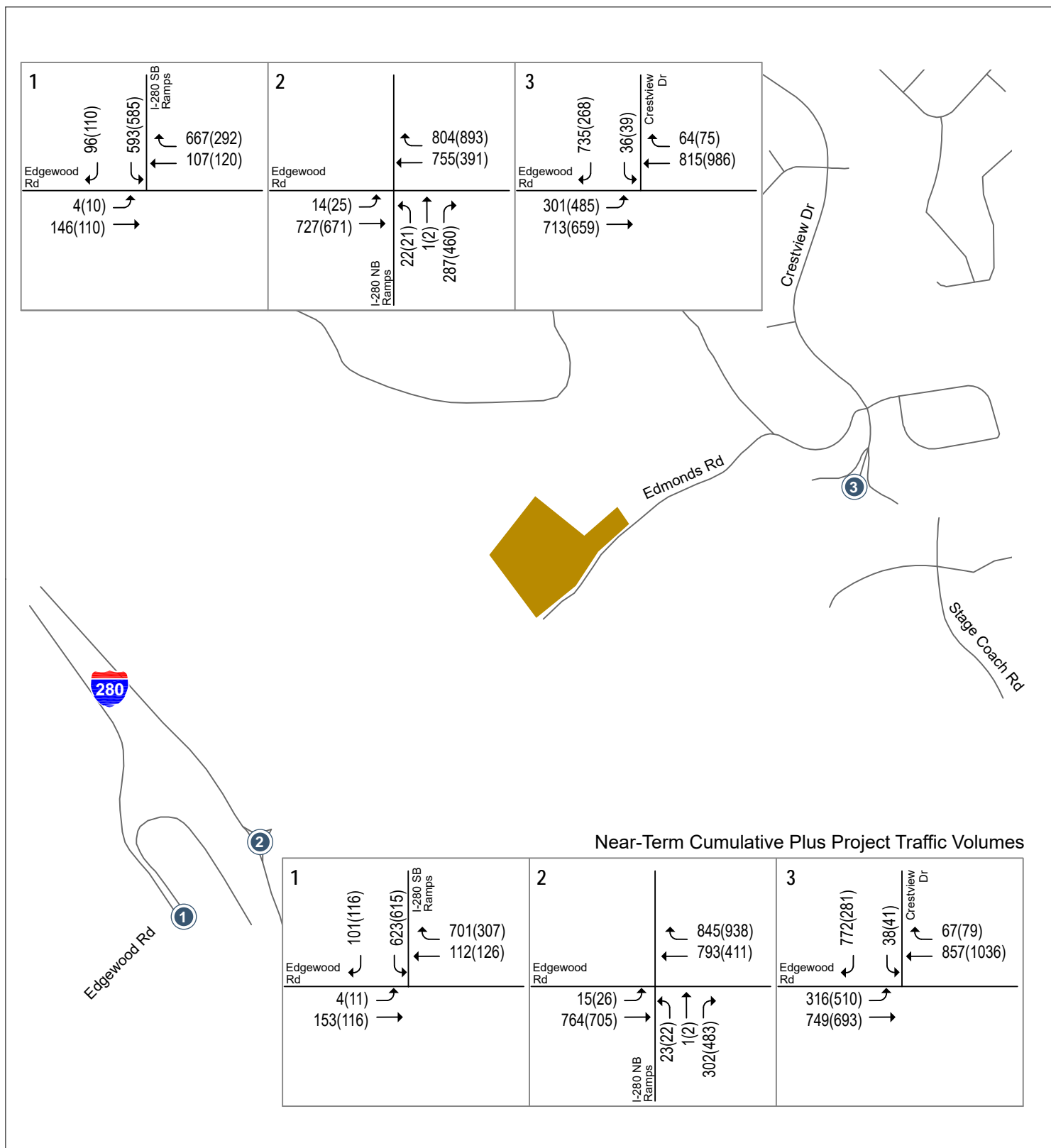
= Site Location

= Study Intersection



**Figure 10-2 Project Trip Distribution and Net Trip Assignment**

*Cordilleras Mental Health Center Replacement Project*



Source: Hexagon Transportation Consultants, Inc., 06/07/2019

## LEGEND

- = Site Location
- X = Study Intersection
- XX(XX) = AM(PM) Peak-Hour Traffic Volumes



**Figure 10-3 Project Conditions Traffic Volumes**

*Cordilleras Mental Health Center Replacement Project*

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## CHAPTER 11 UTILITIES

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This chapter describes the recreational opportunities in the project area and the potential conflicts between motorized and non-motorized uses created by the project. Changes in recreational opportunities are also discussed.

### 11.1 REGULATORY SETTING

#### 11.1.1 San Mateo County General Plan

##### 11.1.1.1 General Land Use Policies

The following policies related to utilities and service systems from the San Mateo County General Plan (San Mateo County 1986), General Plan Policies, Chapter 7. General Land Use Policies, and Chapter 8. Urban Land Use Policies, are relevant to the proposed project:

- 7.3 *Infrastructure*: Distribute land uses where public services and facilities exist or can be feasibly provided (e.g., sewer and water systems) in order to achieve maximum efficiency.
- 7.5 *Energy*: Distribute land use designations in order to minimize the demand for energy consumption and maximize the effectiveness of energy consumed.
- 8.32 *Overcoming Constraints to Development*:
  - a. Encourage efficient and effective infrastructure (e.g., water supply, wastewater, roads) necessary to serve the level of development allowable within urban areas.
  - b. Encourage improvements which minimize the dangers of natural and manmade hazards to human safety and property.
- 8.42 *Solar Access*: Minimize the obstruction of solar access by: (1) protecting structures from encroachment, (2) landscaping with appropriate plant materials, and (3) clustering structures where beneficial.
- 8.43 *Buildings*: Encourage the construction of energy-efficient buildings which use renewable resources and resource-efficient design to the maximum extent possible.

##### 11.1.1.2 Water Supply Policies

The following policies regarding water supply from the San Mateo County General Plan (San Mateo County 1986), General Plan Policies, Chapter 10. Water Supply Policies and Chapter 15. Natural Hazards Policies, are relevant to the proposed project:

- 10.1 *Coordinate Planning*: Coordinate water supply planning with land use and wastewater management planning to assure that the supply and quality of water is commensurate with the level of development planned for an area.
- 10.3 *Water Conservation*: Promote the conservation and efficient use of water supplies.
- 10.5 *Water System*: Define water system as a system of integrated piping, storage tanks, and a source of supply used for providing water for domestic purposes.
- 10.13 *Water Systems in Unincorporated Areas*: Support efforts to improve water distribution and storage systems in unincorporated neighborhoods and communities.
- 10.15 *Water Suppliers in Rural Areas*: Consider the following as appropriate methods of water supply in rural areas: water systems and wells.

10.17 *Improving Existing Water Systems:*

- a. Support, where local residents express an interest, the possible consolidation of water systems under one management and pursue methods of financing this consolidation, such as assessment districts, Federal and State grants, and creation of new districts.
- b. Support the development of funding sources to make appropriate improvements to the facilities of water systems.
- c. Allow water systems using surface water supplies to continue this practice when done in accordance with appropriate permits and approvals.

10.25 *Efficient Water Use:*

- a. Encourage the efficient use of water supplies through effective conservation methods.
- b. Require the use of water conservation devices in new structural development.
- c. Encourage exterior water conservation.
- d. Encourage water conservation for agricultural uses by using efficient irrigation practices.

10.26 *Wastewater Reuse:*

- a. Encourage the reuse and recycling of water whenever feasible.
- b. Encourage the use of treated wastewater that meets applicable County and State health agency criteria.
- c. Support small-scale and on-site water recycling technologies, which meet public health and safety standards, for landscaping and agricultural purposes.

15.30 *Standards for Water Supply and Fire Flow for New Development:*

- a. Require connection to a public water system or private water company or provision of an on-site water supply as a condition of approval for any new development proposal.
- b. Determine the quantity of on-site water supply, fire flow requirements and spacing and installation of hydrants in accordance with the standards of the agency responsible for fire protection for the site proposed for development.
- c. Consider the use of additional on-site fire protection devices including but not limited to the use of residential sprinkler systems and contracting the services of private alarm companies for development proposed in remote areas.

### **11.1.1.3 Wastewater Policies**

The following policies regarding wastewater from the San Mateo County General Plan (San Mateo County 1986), General Plan Policies, Chapter 11. Wastewater Policies, are relevant to the proposed project:

- 11.1 *Adequate Wastewater Management:* Plan for the provision of adequate wastewater management facilities to serve development in order to protect public health, wildlife habitats, and water quality.
- 11.2 *Coordinate Planning:* Coordinate wastewater management planning with land use and water supply planning to assure that the capacity of sewerage facilities is commensurate with the level of development planned for an area.
- 11.3 *Current Technology:* Encourage the development of wastewater management systems that utilize current technology.
- 11.10 *Wastewater Management in Rural Areas:* Consider the following as appropriate methods of wastewater management in rural areas: (1) Rural Service Centers--sewerage systems

and individual sewage disposal systems; (2) Rural Subdivisions and Rural Areas—individual sewage disposal systems.

- 11.16 *Sewer Facilities for Unincorporated Areas*: In unincorporated areas where the County provides sewerage collection services, support the development of adequate sewerage facilities to serve the planned development of these areas. Work with sewerage authorities and cities to reserve capacity commensurate with the level of development planned for these areas.

#### **11.1.1.4 Solid Waste Policies**

The following policies regarding solid waste from the San Mateo County General Plan (San Mateo County 1986), General Plan Policies, Chapter 13. Solid Waste Policies, are relevant to the proposed project:

- 13.1 *Management of Solid Waste Disposal*: Provide management of solid waste in the most efficient and economical manner which will provide adequate services, protect the public health, prevent the creation of nuisances, reduce waste generation and provide for maximum resource recovery.
- 13.5 *Minimize Dependence on Landfills*: Reduce to a minimum the dependence on landfills by promoting recycling, resource recovery and reduction of residential and commercial wastes.

#### **11.1.2 San Mateo County Code**

Relevant chapters of the San Mateo County Code that regulate utilities and service systems are summarized below.

- *Chapter 4.24, Sewer Connections*: Regulates new sewer connections or annexations, sets forth sewer connection and treatment charges, and requires that a sewer connection be used where it is available, among other things.
- *Chapter 4.28, Discharge of Waste into the Sewer System*: This chapter prohibits the discharge of unsafe materials, stormwater, unpolluted water, waste from garbage grinders, holding tank waste, radioactive waste and other pollutants in the County's sanitary sewer system. Allowable wastewater volumes are generally based on the amount of freshwater provided to a user, and a permit is required for deviations from this general rule.
- *Chapter 4.36, Water Conservation*: Requires reasonable measures to conserve water including the prohibition of wasting water (such as from broken plumbing or irrigation device, etc.), limitations on water pressure, installation of water efficient plumbing and fixtures in new development, promotion of water recirculation where feasible, and requirements for water efficient landscaping, among others. The ordinance notes that additional restrictions may apply during drought conditions in accordance with the California Water Code.
- *Chapter 4.105, Recycling and Diversion of Debris from Construction and Demolition*: Encourages contractors to make every structure planned for demolition available for deconstruction, salvage, and recovery prior to demolition; and to recover the maximum feasible amount of salvageable designated recyclable and reusable materials prior to demolition. Requires one hundred percent (100%) of inert solids, and at least fifty percent (50%) of the remaining construction and demolition debris tonnage to be diverted from

landfills. Requires contractors to submit a Waste Management Plan to the County detailing how this will be accomplished.

### **11.1.3 San Mateo County Zero Waste Program**

The County's Government Operations Climate Action Plan sets a goal of diverting 75% of all solid waste by 2020. To achieve this goal, the County will expand recycling and composting programs at County facilities, as well as updating the Environmental Purchasing Policy to address waste, standardize purchases, and reuse inventory. The County's Energy Efficiency Climate Action Plan for its incorporated communities sets a goal to strive towards zero waste by reducing the amount of waste sent to landfills to 4 pounds per person per day by 2020, including a 25% food diversion rate.

## **11.2 ENVIRONMENTAL SETTING**

Existing utilities systems and service providers that serve the project site are described in the sections below.

### **11.2.1 Existing Water System**

Potable water service is provided to the site by the San Francisco Public Utility Commission (SFPUC) via a 6-inch public water main in Edmonds Road. At this time, the static pressure and available flow of the off-site water system is not known. However, domestic and fire water for the site is provided from a tank with a storage capacity of 150,000 gallons. The assumption is that the water from SFPUC does not have adequate pressure for the needs of the site. Water from the 6-inch public main is pumped up to the tank with a base elevation of approximately 414 feet. The pump station is located at the southeast corner of the site at an elevation of 285 feet. A 4-inch line from the tank provides domestic water to the buildings. A separate 6-inch line from the tank provides fire water to a dedicated fire system and fire hydrants. The upper one-third of the tank provides storage for domestic water. The lower two-thirds of the tank is a reserve for fire water. Recent fire hydrant flows tests show that the system can provide 1,000 gallons per minute (gpm) with a residual pressure of 20 pounds per square inch (psi). This flow rate does not meet current California Fire Code requirements of 1,500 gpm.

### **11.2.2 Existing Sanitary Sewer System**

A 6-inch sewer line in Edmonds Road currently provides sanitary sewer service to the site. The 6-inch sewer line flows easterly in Edmonds Roads and connects to a manhole that is part of the Scenic Heights County Sanitation District which is owned and maintained by San Mateo County. An on-site network of 6-inch and 4-inch sewer lines convey sewage to the main sewer line in Edmonds Road.

### **11.2.3 Existing Storm Drain System**

The main existing storm drain collection system on the site is Cordilleras Creek. The creek flows southeasterly through the site and eventually parallels Edmonds Road. From an elevation of 310 feet to about 300 feet, the creek is daylighted with a well-defined bed and bank. A concrete headwall, with a trash rack, directs the creek into a 30-inch diameter concrete pipe that flows along the west side of the CMHC building. A small tributary creek flows west to east near the Canyon Oaks facility. Another concrete headwall collects the tributary in to a 30-inch diameter concrete pipe. Both 30-inch pipes combine at a manhole where a 42-inch pipe exits and flows easterly and discharges at a concrete spillway into the creek in the southeast corner of the site at



an elevation of 275 feet. Another smaller tributary from the northeast is intercepted along the existing access road and conveyed by a pipe to the spillway. Runoff from the site and building roofs is collected and conveyed to the large diameter storm drainpipes that run throughout the site.

The County has reported some known issues with the headwalls and trash racks being blocked by debris and preventing flow from the creeks and tributaries from entering the pipes. This has caused some flooding at the site. However, the flooding is not likely caused by lack of capacity in the pipes.

#### **11.2.4 Existing Solid Waste System**

Solid waste generated on the site is disposed of in a trash area with three dumpsters for trash, recycling and compost (HGA 2014). Garbage and recycling collection services are provided to the site by Allied Waste Services of Half Moon Bay, and the closest landfill is the Ox Mountain Landfill, located approximately seven miles to the north west of the site. The landfill has a daily capacity of 3,598Tons/day and is estimated to reach capacity in 2038. In 2015, the facility has 22,180,000 cubic yards of space remaining (Cal Recycle 2015).

#### **11.2.5 Existing Gas and Electrical Systems**

Gas and electricity are provided to the site by the Pacific Gas and Electric Company (PG&E). The majority of the natural gas piping for the existing CMHC building is above the ceiling or concealed and not visible. The only visible piping visible is limited to what is visible in the existing boiler room on the ground floor. There are two gas meters and regulators for the building. One gas regulator/meter is for the kitchen. The second regulator/meter is for the mechanical equipment.

Electricity for the existing CMHC building is derived from a PG&E pad-mount transformer located in an indoor dry vault in the basement level. The building is served by a main switchboard located in the main electrical room adjacent to the PG&E's vault. The main switchboard supplies various distribution and branch-circuit panel boards located strategically in various electrical rooms in the building. The majority of the electrical equipment, including the main switchboard, is original equipment installed in 1949. The equipment is outdated and past the manufacturer's 25-year recommended life span.

### **11.3 PROJECT IMPACTS**

#### **11.3.1 Thresholds of Significance**

Based on Appendix G of the CEQA Guidelines and the San Mateo County Initial Study Environmental Evaluation Checklist, the following factors were considered in determining whether the proposed project would have a significant utility impact. Would the project:

- (a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?
- (b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

- (c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- (d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?
- (e) Comply with Federal, State, and local management and reduction statutes and regulations related to solid waste?

The proposed project would have no or minimal impact with regard to the following thresholds; therefore, these issues are dismissed from further discussion in the sections below:

- The project would comply with all applicable laws and regulations pertaining to solid waste.

### 11.3.2 New or Expanded Utilities

**Water Facilities.** The project also includes construction of a new water tank to meet Appendix B of the 2016 California Fire Code. The new tank would be a 24-foot tall 48-foot diameter bolted steel tank, comprising of 315,000-gallons. It would be located adjacent to the existing tank. The existing water storage tank would remain in operation during both construction and post development. The new storage tank would assist in meeting the project water storage requirements in combination with the existing tank.

The location for the proposed tank is adjacent to the existing tank on a previously developed concrete pad. Minor earthwork would be required for construction of the water tank pad and pipeline trenching as shown on the grading plan (Appendix B, Sheets C0301 to C0306). Geologic hazard impacts of the project are described in EIR section 6.3. Geotechnical recommendations for the cutslopes and water tank foundation would be followed as required by Mitigation Measure GEO-1. Earthwork and trenching required for the water tank pad and pipeline trenching could vegetation and wildlife. Project impacts to biological resources are described in EIR section 4.2.1. These potential impacts would be mitigated by Measures BIO-3, BIO-4a and 4b, BIO-5a and 5b, BIO-6, BIO-7a and 7b, and BIO-9. With implementation of these measures, potential impacts related to new water infrastructure would be *less than significant with mitigation*.

**Stormwater Drainage.** The project would include a new storm drainage collection, detention, and treatment system as a replacement for the existing system. There is anticipated to be a slight increase in overall peak discharge at the proposed new outfall. Project design incorporates biofiltration basins, which would be situated in the central open space area between the buildings as shown in the Storm Water Control Plan (Appendix B, Sheet C1401). The stormwater drainage control plan and Mitigation Measure HYD-1 and Measure HYD-2 discussed in EIR Chapter 8, Hydrology and Water Quality would ensure the project meets meet local stormwater treatment C.3 provisions mandated through San Mateo County's MRP permit. Additionally, a SWPPP would be prepared to reduce potential water contamination impacts during project construction. Follow construction, adherence to the stormwater control plan would ensure that water quality is kept at acceptable levels during project operations. Stormwater drainage improvements have the potential to impact creek habitat upstream and downstream of the project as described in EIR sections 0 and 0. Mitigation Measure BIO-6 and Measure BIO-8 would address impacts. Thus, impacts to the environment related to new stormwater drainage infrastructure would be *less than significant with mitigation*.

**Electric Power and Communications.** Electricity and telecommunications services would be provided from an existing 12KV overhead electrical distribution line and telephone line running along the southern edge of the site which currently provides service to the campus. Additional trenches would be dug to provide electricity and telecommunications to each of the proposed new buildings. This would use the existing overhead line, and no offsite upgrades would be required for the power grid system, which would have a *less-than-significant* impact on the environment.

**Natural Gas.** Gas service is currently being provided to the site from an existing gas main located in Edmonds road near the entrance to the facility. No modification to the main gas infrastructure is proposed. Therefore, no impact to the environment would occur. Sufficient Water Supplies

The Cordilleras Health System Replacement Project would increase patient capacity at the facility by 4 and facility staff by 18 full-time equivalents. In addition, new landscaping would be installed with irrigation. The project would have a new water demand of approximately 19,000 gpd – an increase of roughly 3,600 gpd over existing estimated demand. As such the project would not use significantly more water than the current facility. The proposed additional water tank is capable of providing 2,750 gallons per minute of water that would meet fire regulations. There would be a *less-than-significant* impact to water supplies.

### 11.3.3 Wastewater Treatment Capacity

The project would increase the number of patients at the facility by 4 and the increase of staff by 18 full-time equivalents resulting in an increase in wastewater demand of 1200 gpd. and would not, therefore, impact on wastewater treatment capacity. There would be a *less-than-significant* impact to wastewater.

### 11.3.4 Generation of Solid Waste

The project site is served by Ox Mountain Landfill, which has an estimated remaining capacity of approximately 22 million cubic yards. The anticipated closure date (based on existing rates of disposal, density, and cover usage) is 2034 (Browning-Ferris Industries 2017). The County implements various programs through its Office of Sustainability to reduce solid waste generation and increase diversion of recyclable materials and organic materials from landfills. The County would implement a Waste Management Plan to demonstrate compliance with County regulations to salvage, reuse, or recycle all inert solids and at least 65% of construction and demolition debris created by the project. As stated in EIR section 5.1.6, the project would be subject to CalGreen requirements, which address planning, design, material conservation and resources efficiency and environmental quality, among others. The proposed uses as public open space, government offices, and a parking garage would not result in an inordinate amount of solid waste generation compared to similar types of other developments. The impact on solid waste would be *less than significant*.

## 11.4 CUMULATIVE IMPACTS

There are no significant impacts to available water supplies, wastewater treatment capacity, solid waste, or comply with Federal, State, and local statutes and regulations. The project replaces existing infrastructure and does not generate significant additional demand on utilities as the project would use similar amounts of utilities to existing conditions. These topics would have *no* cumulative impact on the environment. The potential for cumulative impacts to biological

resources and water resources related to construction of new water and stormwater infrastructure are described in EIR sections 4.3.1 and 8.4.

## **11.5 MITIGATION MEASURES**

**Impact UT-1:** Construction of water tank and service line requires hillside cuts and trenching. Potential impacts to vegetation and wildlife could occur.

The impact is mitigated by Measure GEO-1 (EIR section 6.5) and Measures BIO-3, BIO-4a and 4b, BIO-5a and 5b, BIO-6, BIO-7a and 7b, and BIO-9 (EIR section 4.5). No additional mitigation is required.

**Impact UT-2:** Construction of stormwater drainage could impact creek habitat upstream and downstream of the project and impact water quality.

The impact is mitigated by Measures BIO-6, BIO-8, HYD-1, and HYD-2 (EIR sections 4.5 and 8.5). No additional mitigation is required.

## CHAPTER 12 WILDFIRE

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### 12.1 REGULATORY SETTING

#### 12.1.1 California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (Cal Fire) has mapped fire threat potential throughout California. Cal Fire ranks fire threat based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The rankings include no fire threat and moderate, high, and very high fire threat. Additionally, Cal Fire produced a 2010 Strategic Fire Plan for California that contains goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments. Cal Fire's Office of the State Fire Marshal provides oversight of enforcement of the California Fire Code (CFC) as well as overseeing hazardous liquid pipeline safety.

#### 12.1.2 California Fire Code

The CFC is Part 9 of Title 24. Updated every three years, the CFC includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, fire hydrant locations and distribution, and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas. Fire protection is provided to the site by Cal Fire and, as such, implements and enforces the CFC at the project site.

#### 12.1.3 California Public Resources Code

The California Public Resources Code (PRC), Section 4291, states that a building or structure in, or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material, shall maintain at all times 100 defensible feet of space from each side and from the front and rear of the structure, but not beyond the property line unless modified by local regulations. The amount of fuel modification necessary to create defensible space shall take into account the flammability of the structure as affected by building material, building standards, location, and type of vegetation. Fuels shall be maintained in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure. This regulation does not apply to single specimens of trees or other vegetation that are well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to a structure or from a structure to other nearby vegetation. The intensity of fuels management may vary within the 100-foot perimeter of the structure, the most intense being within the first 30 feet around the structure. Consistent with fuels management objectives, steps should be taken to minimize erosion.

#### 12.1.4 Cal Fire Defensive Zones

Cal Fire describes defensible space as the buffer you create by removing dead plants, grass and weeds. In order to do so, Cal Fire provides recommendations for creating a defensible space. The 100-foot radius as required by the PRC is split into two zones within the radius. These zones are described below and shown within the project site property boundary in Figure 12-1 Fire Defensible Zones.

Zone 1 extends 30 feet out from buildings, structures, etc. The following activities should be performed in Zone 1:

- Remove all dead plants, grass and weeds (vegetation).

- Remove dead or dry leaves and pine needles from your yard, roof and rain gutters.
- Trim trees regularly to keep branches a minimum of 10 feet from other trees.
- Remove branches that hang over your roof and keep dead branches 10 feet away from your chimney.
- Relocate wood piles into Zone 2.
- Remove or prune flammable plants and shrubs near windows.
- Remove vegetation and items that could catch fire from around and under decks.
- Create a separation between trees, shrubs and items that could catch fire, such as patio furniture, wood piles, swing sets, etc.

Zone 2 extends 100 feet out from buildings, structures, decks, etc. The following activities should be performed in Zone 2:

- Cut or mow annual grass down to a maximum height of 4 inches.
- Create horizontal spacing between shrubs and trees. (See diagram)
- Create vertical spacing between grass, shrubs and trees. (See diagram)
- Remove fallen leaves, needles, twigs, bark, cones, and small branches. However, they may be permitted to a depth of 3 inches.

### **12.1.5 San Mateo County General Plan**

The following policies relate to wildfire hazards from the San Mateo County General Plan.

#### *15.30 Standards for Water Supply and Fire Flow for New Development*

- a. Require connection to a public water system or private water company or provision of an on-site water supply as a condition of approval for any new development proposal.
- b. Determine the quantity of on-site water supply, fire flow requirements and spacing and installation of hydrants in accordance with the standards of the agency responsible for fire protection for the site proposed for development.
- c. Consider the use of additional on-site fire protection devices including but not limited to the use of residential sprinkler systems and contracting the services of private alarm companies for development proposed in remote areas.

#### *15.31 Standards for Road Access for Fire Protection Vehicles to Serve New Development*

- a. Consider the adequacy of access for fire protection vehicles during review of any new development proposal.
- b. Determine the adequacy of access through evaluation of length of dead-end roads, turning radius for fire vehicles, turnout requirements, road widths and shoulders and other road improvement considerations for conformance with the standards of the agency responsible for fire protection for the site proposed for development.
- c. To the maximum extent possible, design access for fire protection vehicles in a manner which will not result in unacceptable impacts on visual, recreational and other valuable resources.

### *15.32 Street Signing*

Support efforts to identify all roads, streets and major public buildings in a manner so that they are clearly visible to fire protection and other emergency vehicles.

### *15.33 Road Patterns*

- a. Ensure road patterns that facilitate access for fire protection vehicles and provide secondary access and emergency evacuation routes when reviewing proposals for new subdivisions.
- b. Encourage the Department of Public Works to study existing road patterns that have access problems to determine the feasibility and costs of access improvements.
- c. Encourage fire protection agencies to identify emergency access and evacuation routes for existing developed areas and to provide this information to area residents.

### *15.34 Vegetative Clearance Around Structures*

- a. Require clearance of flammable vegetation around structures as a condition of approval to new development in accordance with the requirements of the agency responsible for fire protection.
- b. Conduct periodic inspections to ensure maintenance of required clearances.

### *15.35 Fire Retardant Vegetation*

Encourage the use of fire-retardant vegetation when reviewing new development proposals.

## **12.1.6 San Mateo County Emergency Operations Plan**

The Emergency Operations Plan (EOP) establishes policies and procedures and assigns responsibilities to ensure the effective management of emergency operations within the San Mateo County Operational Area. It provides information on the county emergency management structure of how and when the Emergency Operations Center staff is activated.

The overall objective of the EOP is to ensure the effective coordination of response forces and resources in preparing for and responding to situations associated with natural disasters, technological incidents and national security emergencies. To carry out its responsibilities, the emergency management organization will accomplish the following objectives during an emergency/disaster:

- Maintain overall coordination/support of emergency response and recovery operations, including on scene incident management as required.
- Coordinate and liaise with appropriate federal, state and other local government agencies, as well as applicable segments of private sector entities and volunteer agencies.
- Establish priorities and resolve conflicting demands for support.
- Prepare and disseminate emergency public information to alert, warn, and inform the public.
- Disseminate damage information and other essential data.

The EOP's goals are as follows:

- Provide effective life safety measures and reduce property loss and damage to the environment.

- Provide for the rapid resumption of impacted businesses and community services.
- Provide accurate documentation and records required for cost recovery efforts.

## **12.2 ENVIRONMENTAL SETTING**

### **12.2.1 Wildfire Risk**

The CMHC property comprises 20.6 acres and is situated at the headwaters of Cordilleras Creek. The entrance to the property is developed with the existing CMHC building, roads, parking, and associated infrastructure. Additional County facilities on the property include County Fire Station No. 18 and the Canyon Oaks Youth Center (Figure 2-4). The remainder of the property comprises steep hillsides covered with grassland, brush, and oak woodland vegetation.

The CMHC property is surrounded on all sides by open space occupied by woodland, coastal scrub, and grassland vegetation. The Pulgas Ridge Open Space Preserve adjoins the property to the north, west, and east and Edgewood Park and Natural Preserve is located to the south across Edgewood Road (Figure 12-2 Wildfire Hazard Severity Zones). Land to the west of the property comprises large swathes of undeveloped woodland in the mountainous terrain running the length of the San Francisco Peninsula. Residential areas along Crestview Drive are located east of the project and the developed areas of San Carlos and Redwood City are situated to the east.

The CMHC property and the adjacent Pulgas Ridge Open Space Preserve are located in a State Responsible Area (SRA)<sup>22</sup> that is designated by Cal Fire as a high fire severity zone (Figure 12-2). The CMHC property is adjacent to a very high fire risk Local Responsibility Area (LRA)<sup>23</sup> (Cal Fire 2007).

Since the 1940's there have been very few large fires within San Mateo County. The most recent Skeggs Fire in September 2017 burned 50 acres, closing down public parks. That was a relatively small-scale fire when considering San Mateo County's past (Fire Safe San Mateo 2017). Historic fires have mostly occurred in the undeveloped areas towards the west and center of the County (Figure 12-3 Fire History Map).

As part of the project, 239 trees would be removed from the project footprint to allow space for project construction. After the new facility is built, 175 trees would be planted within the footprint, leading to a net loss of 52 trees.

### **12.2.2 Wildfire Management and Response**

Fire protection is provided to the site by San Mateo County Fire Department, which contracts with Cal Fire to provide fire protection for unincorporated San Mateo County.

## **12.3 PROJECT IMPACTS**

### **12.3.1 Thresholds of Significance**

Based on Appendix G of the CEQA Guidelines and the San Mateo County Initial Study Environmental Evaluation Checklist, the following factors were considered in determining whether the proposed project would have a significant wildfire impact. Would the project:

<sup>22</sup> State Responsibility Areas are recognized by the Board of Forestry and Fire Protection as areas where Cal Fire is the primary emergency response agency responsible for fire suppression and prevention.

<sup>23</sup> Local responsibility area fire protection is typically provided by city fire departments, fire protection districts, counties, and by Cal Fire under contract to local government.



- (a) Substantially impair an adopted emergency response plan or emergency evacuation plan?
- (b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
- (c) Require the installation of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?
- (d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

### **12.3.2 Substantially Impair an Adopted Emergency Plan**

The San Mateo County EOP is the only relevant emergency plan for the project, being located in unincorporated San Mateo County. The new development footprint would not impede access by fire protection personnel or equipment. The site is designed with a fire access loop road to allow access to emergency personnel. No changes to site access are proposed. County Fire Station 18 is located on site adjacent to the proposed MHRC and Co-Housing buildings (Figure 2-4) and would have immediate emergency access to the project buildings. There are no developments that would impede access to traffic on Edgewood Road and, therefore, the project would not impair the plan or impede emergency responses. The project would have *no impact* on an adopted emergency plan.

### **12.3.3 Exacerbate Wildfire Risks to Project Occupants**

No new ignition sources would be introduced to the site as a result of the project. No new powerlines or extension of powerlines would be developed. Any new generators would be enclosed.

Construction of the project would result in grading of existing slopes to increase the footprint of the facility, tree removal to allow space for project construction, and construction of anti-debris barriers to prevent debris from landslides. Removal of trees in the project area would reduce moisture held in the soil, which would not be adequately replaced by low ground coverage and landscaping. Debris benches, as recommended in the geotechnical report to mitigate against landslides and erosion could increase the fuel load by allowing flammable material to accumulate behind them. Both these effects would allow wildfire to spread faster (Collamer and Sampson, Cal Fire, personal communication).

The project would place the four MHRC buildings directly adjacent to near vertical slopes, as foundations would be graded into the hillside. There would be soil nail walls holding the slopes back at a distance of approximately 15 feet away from the buildings. The existing building is approximately 30 feet away from slopes at its closest point. The steep slopes from grading activity next to the buildings has the potential to funnel fires into the project area, exacerbating the risk from wildfires (Collamer and Sampson, Cal Fire, personal communication).

The project incorporates measures to minimize fire risk including a fire loop access road, new water supply tank to meet fire flow requirements, fire-resistant building materials, and implementation of a 100-foot radius defensive zone pursuant to PRC 4291 (Mitigation Measure WFR-1). County Fire Station 18 is located at the project site and would provide immediate fire protection services.

Mitigation Measure WFR-1 contains provisions to reduce the potential for exacerbating a wildfire by creating a defensible space management plan. The management plan would specify actions and methods that would further reduce risks from wildfire. This would include reducing fuel loads, maintaining fire breaks, keeping space between trees, and other actions as specified by Cal Fire. Given the high fire hazard rating of the project property location and surrounding hillsides, any development on the project site which encroaches into the hillside is determined by Cal Fire to exacerbate wildfire risk. Although implementation of Measure WFR-1 would reduce this risk, by Cal Fire's determination due to the location of the facility in a high fire risk area, the impact remains *significant and unavoidable*.

#### **12.3.4 Exacerbate Fire Risk or Impact the Environment from new Infrastructure**

The project would include construction of a new 26-foot wide service and fire access loop road extending from Edmonds Road, a new tank 315,000-gallon storage tank feeding both a potable water distribution system and a fire water service system, a new sanitary sewer collection system, a new storm drainage collection, detention, and treatment system, a new PG&E pad mounted transformer located at the site in the vicinity of the Co-Housing building, and new gas and electrical piping. The electrical and gas pipelines replace existing utilities and would be connected to existing distribution points on the campus property. Increased water storage, water and wastewater infrastructure, and construction of fire roads would not exacerbate fire risk. The fire loop road does not require steep road cuts and would not be subject to landslide or soil failure that could hinder fire protection efforts or otherwise exacerbate fire risk. There would be no significant increase in fire risk from the associated utilities, and the project would have a *less-than-significant impact* on the environment.

#### **12.3.5 Exposure to Post-Fire Risk**

The project site is surrounded by steep slopes and has the potential to have unstable slopes and runoff if wildfire were to burn in the project vicinity. Mitigation Measure WFR-1 contains provisions to reduce impacts in the event of a wildfire, and Mitigation Measure WFR-2 would reduce impacts from post-fire instability in the event of a wildfire. Therefore, the impact would be *less than significant with mitigation*.

### **12.4 CUMULATIVE IMPACTS**

The proposed project has the potential to exacerbate wildfire risk by reducing soil moisture through tree removal, constructing landslide debris basins that could accumulate flammable material, and constructing buildings adjacent to steep cut slopes. Cal Fire has determined that even with measures such as a fire loop access road, new water supply tank to meet fire flow requirements, fire-resistant building materials, and implementation of defensible space zones (Mitigation Measure WFR-1) incorporated into the project design, the impact of exacerbated fire risk remains significant unavoidable due to its location in a high fire hazard zone. The proposed project is replacing an existing aged facility with modern infrastructure and is only marginally increasing residential and employee population. The new facility would not introduce new activities to the site. The project is adding new infrastructure to meet fire flow requirements at the site and fire protection personnel at County Fire Station 18 are located adjacent to the project site and presently serving the existing facility. As a result, the project impact of increased wildfire impact is localized to the site and is unlikely to contribute toward a cumulative increase in wildfire risk. Thus, the project would have a *less-than-significant cumulative impact*.

## 12.5 MITIGATION MEASURES

**Impact WFR-1:** The project would exacerbate existing wildfire risks by reducing soil moisture through tree removal, installing the anti-debris barriers that could accumulate flammable material thereby increasing the fuel load as well as funneling fires into the project area, and constructing buildings adjacent to steep slopes, which could make firefighting more difficult.

**Mitigation Measure WFR-1:** The County shall prepare a Defensible Space Management Plan to identify specific site treatment activities designed to reduce fuel load. The plan shall identify actions specific to 30-foot and 100-foot defensible space zones pursuant to Cal Fire recommendations. Actions within the defensible space are expected to include, but not be limited to, removal of ground and ladder fuels, regular clearing of debris barriers, and general maintenance of the defensible space zone. The Plan shall specify the frequency of site inspections and vegetation management activities as well as the responsible party for conducting these activities.

**Effectiveness:** *Defensible space management would reduce fuel loads surrounding CMHC facility. The impact of increased wildfire risk remains significant and unavoidable.*

**Implementation:** *San Mateo County Public Works Department*

**Timing:** *Prior to project occupancy*

**Monitoring:** *County PDU shall submit Defensible Space Management Plan to Cal Fire for review and approval. County Public Works Department shall be responsible for implementing fuel reduction treatments.*

**Impact WFR-2:** The slope surrounding the project could suffer from post fire instability due to loss of vegetation and soil structure.

**Mitigation Measure WFR-2:** In the event of a wildfire on the project parcel, a geotechnical engineer will examine the slopes for potential instability. The inspection shall occur as soon as feasible after the fire and before any rain events. A report shall be prepared by the geotechnical engineer, and the County shall implement recommendations to reduce the potential of slope instability.

**Effectiveness:** *Measures taken would reduce potential for post-fire instability.*

**Implementation:** *San Mateo County*

**Timing:** *Post-fire event inspection*

**Monitoring:** *Post fire slope inspections shall be addressed in the Defensible Space Management Plan prepared in response to Measure WFR-1. County PDU shall submit Defensible Space Management Plan to Cal Fire for review and approval. County Public Works Department shall be responsible for site inspections.*



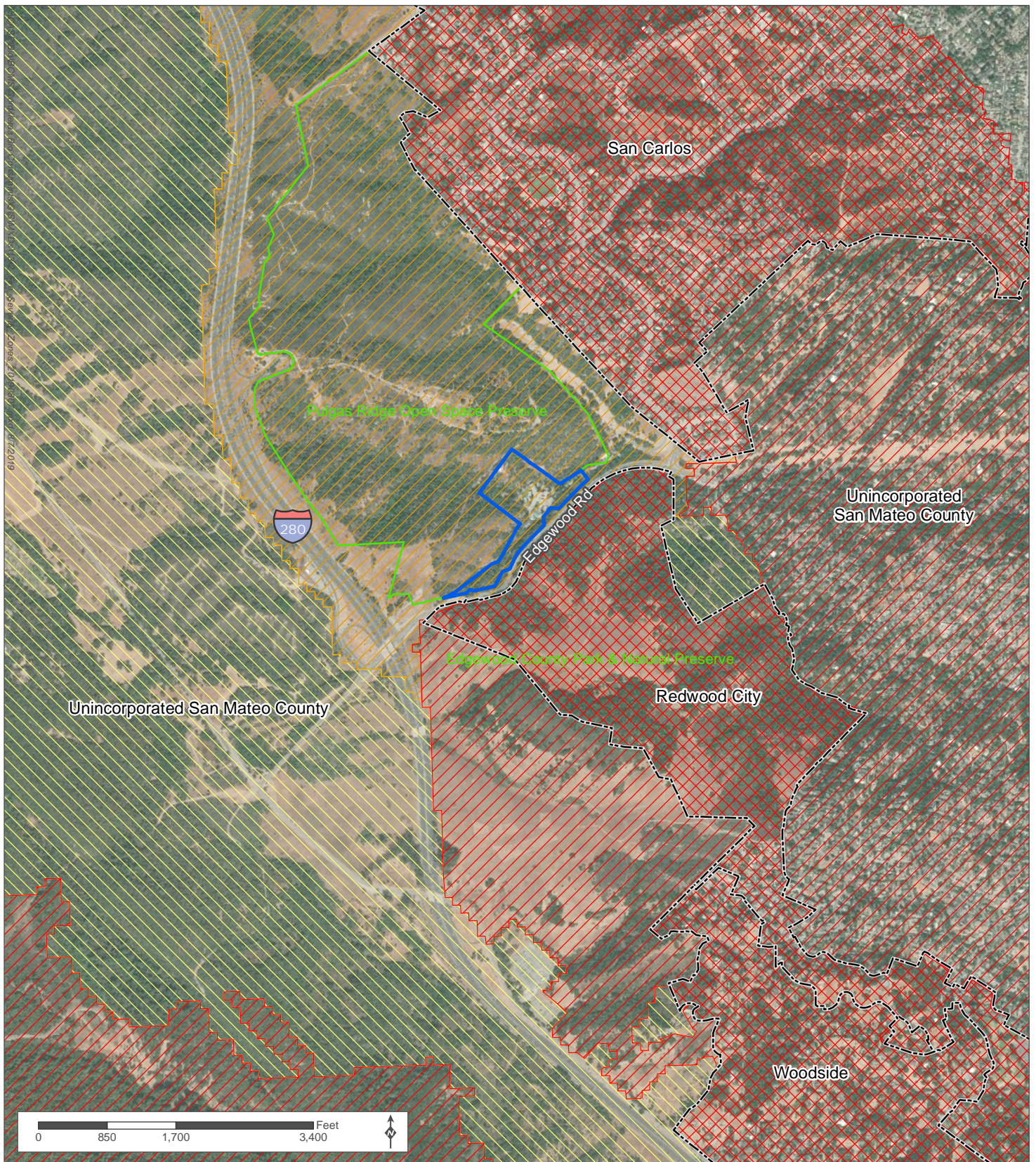
LANDS OF  
MID REG OPEN SPACE DIST  
APN: 050-470-090



Source: San Mateo County 2019; MIG 2019

**Figure 12-1 Fire Defensible Zones**  
*Cordilleras Mental Health Center Replacement Project*





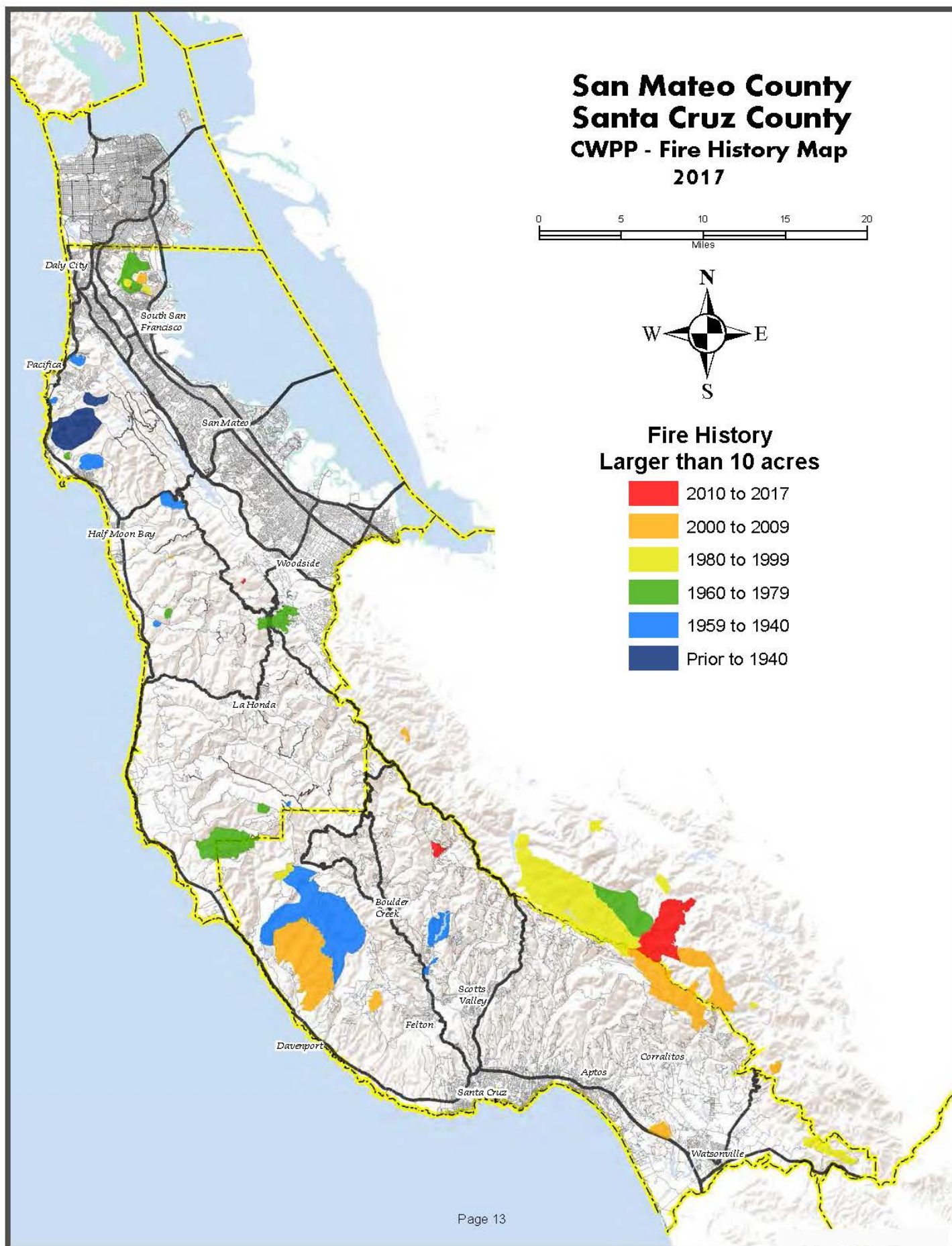
Source: ESRI 2017; CalFire 2018; MIG 2019

- |  |                              |
|--|------------------------------|
| Very High Fire Hazard in Local Responsibility Area (LRA) | Property Boundary            |
| Very High Fire Hazard in State Responsibility Area (SRA) | City Boundary                |
| High Fire Hazard in State Responsibility Area (SRA)      | Open Space Preserve Boundary |
| Moderate Fire Hazard in State Responsibility Area (SRA)  |                              |

**Figure 12-2 Fire Hazard Severity Zones**

*Cordilleras Mental Health Center Replacement Project*





Source: San Mateo County 2017; MIG 2019

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## CHAPTER 13 ALTERNATIVES

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CEQA Guidelines section 15126.6 states that an EIR shall describe a range of reasonable alternatives to a project or location of the project which would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant effects of the project. An EIR's discussion of alternatives does not need to consider every conceivable alternative but must foster informed decision making and public participation. CEQA intends for the alternatives discussion to focus on alternatives that are capable of avoiding or substantially reducing any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives.

An EIR is not required to consider alternatives that are infeasible (CEQA Guidelines section 15126.6). A lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. Factors that may be taken into account when considering feasibility include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site.

### 13.1 CONSIDERED AND REJECTED ALTERNATIVES

An EIR should identify any alternatives that were considered by the lead agency but were not compared to the proposed project in the EIR because they were determined to be infeasible and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in the EIR are: 1) failure to meet most of the basic project objectives (see Project Description); 2) infeasibility; 3) inability to avoid significant impacts.

#### 13.1.1 Full-Scale Site Plan Designs

San Mateo County has been planning for the replacement of the CMHC since 2014 when it prepared a Feasibility Study (2014; see EIR section 2.3.1). The feasibility evaluated the potential to upgrade and expand the CMHC from 117 to 135 beds to help meet the County shortage of mental health facilities providing residential care. In 2015, the County prepared a preliminary concept plan for a CMHC replacement facility involving five 16-bed MHRC buildings and one 55-bed Co-Housing building.

Eight site plan designs were considered and rejected during the design phase before selecting the current site plan. Goals of the site plan selection process were to 1) reduce impacts on Cordilleras Creek canyon to reserve as much as possible the natural beauty; 2) reserve budget (e.g. reduce earthwork and retaining wall); and 3) accommodate the core vision and values of the CMHC program. Different options had both advantages and disadvantages with tradeoffs between encroachment on riparian areas, flood control, oak woodland habitat loss, and extensive slope cuts. Site plan concepts considered alternate building shapes, clustering, access road configurations, building heights, and outdoor space use.

After further site investigation, the County PDU determined that presence of numerous site constraints including steep side slopes, multiple drainages, and riparian and oak woodland habitat values resulted in numerous significant environmental impacts. The full-scale project concept was rejected in favor of a smaller project with a reduced footprint to avoid an escalation

of construction costs and staying within the targeted budget approved by the County Board of Supervisors. The full-scale preliminary concept plan was rejected during the value engineering process in favor of the proposed design evaluated in this EIR due to feasibility and inability to avoid significant impacts.

### **13.1.2 Alternate Project Locations**

Prior to the Feasibility Study, the County project team performed due diligence in assessing potential alternate County owned sites for the replacement project. The project team conferred with the County's Real Property division and obtained a list of all available County parcels. Each of these sites was evaluated for adequacy of size for the programs, zoning, appropriate location in a therapeutic environment, central access to medical and other essential services that are frequently required by MHRC consumers, and compatibility with the surrounding neighborhood.

None of the available County owned parcels met all of the program criteria as well as the existing site on Edmonds Road. Therefore, the project team focused on developing a phased replacement program on the existing site.

During the value engineering process for the full-scale preliminary concept plan (section 13.1.1), the County again evaluated the options for other project locations that had fewer environmental constraints. The County considered several sites, both County owned and not County owned, and again determined that the existing Cordilleras property offered the best value and ability to retain important program elements such as use of natural beauty in healing. The County rejected alternative

### **13.1.3 Patient Relocation During Construction**

To consider a project site development plan which does not require the existing CMHC building to remain operational during project construction, the County explored the following options for relocating the 68 residents in the locked MHRC portion of Cordilleras during project construction:

- Rental of another vacant building or portion of a building in the Bay Area that could be converted to a temporary MHRC
- Available beds in other MHRCs operated by other organizations

Patient relocation prior to site construction would potentially allow buildings to be sited within the current CMHC building footprint and reduce encroachment on adjacent slopes.

Concentrating buildings toward the center of the flat open area would reduce impacts to oak woodland habitat and would likely reduce increased wildfire risk. This alternative would require patient relocation for approximately two years.

Ultimately the County could not find a reliable solution for relocation of the entire group of 68 MHRC patients that would be available on the timeline required for this project. The most reliable solution would be contracting for MHRC beds in other facilities outside of San Mateo County. Vacant MHRC beds are not plentiful and the County BHRS already struggles to place patients needing to be placed out of San Mateo Medical Center. The alternative of patient relocation during construction is infeasible and rejected from further consideration. As a result, the current approach is to design construction phasing to avoid relocation of CMHC residents during construction and to reduce the number of residents during the construction period through attrition.



### 13.1.4 Reduced Co-Housing Capacity

The Feasibility Study evaluated reducing the number of Co-Housing beds by 12 in order to add 12 MHRC beds. However, there is a need for more Co-Housing beds for patients ready to leave the more intensive MHRC level of care. BHRS and Aging and Adult Services report that Co-Housing beds are increasingly difficult to find in the community for patients stepping down from MHRCs. The lack of availability results in patients remaining at more intensive and costly levels of care and prevents placements of other patients who need beds at those higher levels of care. For this reason, the Co-Housing capacity has been increased from 49 to 58 as part of the project. Due to the demand for housing, a reduced capacity of the Co-Housing building was rejected from further consideration.

## 13.2 ALTERNATIVES CONSIDERED

Pursuant to CEQA Guidelines section 15126.6, the rationale for selecting the alternatives presented in this EIR is to attempt to feasibly attain most of the basic project objectives while avoiding or substantially lessening the significant effects of the project. As presented in Table S-1 and described in the document, the proposed project would have potentially significant impacts on Air Quality (construction emissions), Biology (tree removal/nesting birds/roosting bats), Geology/Soils (seismicity and soil stability), Hazards (building demolition), Hydrology/Water Quality (storm drainage), Noise (construction noise), Transportation (vehicle miles traveled; VMT), and Utilities (water and storm drainage). The No Project Alternative presented below is required by CEQA. The Reduced Project Size Alternative is considered in order to evaluate substantially reduce environmental impacts.

### 13.2.1 No Project Alternative

CEQA Guidelines section 15126.6(e) requires the consideration of a No Project alternative. Under the No Project Alternative, the proposed project, consisting of constructing four 16-bed MHRC buildings and one 57-bed Co-Housing building with supporting landscaping, parking, and utility upgrades would not occur. The County would continue to utilize the existing CMHC building for an unknown length of time. The County would continue to incur high maintenance costs associated with the aged building. The CMHC program would continue to operate within the space constraints of the existing building, which inhibits best practices for mental health care. The County would continue to not receive federal reimbursements for its mental health care program. Eventually, it is likely the County would propose another, similar project to address the deficiency of best care practices and program costs, but it is unknown how long it would be before the County proposed another mental health facility project.

Change in Impacts -- The No Project Alternative would eliminate potentially significant impacts to air quality, biology, geology/soils, hazards, hydrology/water quality, noise, and utilities associated with construction of the proposed project. Mitigation measures to reduce these potentially significant impacts would not be necessary. All features of the current CMHC building and program would remain unchanged. There would be no change to the Cordilleras project site.

Obtain Objectives - The No Project Alternative would not meet the basic objectives of the project (EIR section 2.3.3).

***The No Project Alternative would avoid all significant environmental effects of the project; however, because the No Project Alternative would not meet any of the project objectives, this***

***EIR has identified an environmentally superior alternative among the other alternatives per CEQA Guidelines section 15126.6(e)(2).***

### **13.2.2 Reduced Project Size Alternative**

The Reduced Project Size Alternative would consist of a smaller CMHC footprint. The intent of this alternative would be to reduce the construction impacts associated with the project by reducing hillside grading and loss of oak woodland and riparian habitat values. Although the proposed project is sized to the scale of the existing CMHC building (with a modest 4-bed increase), a reduced sized project would reduce environmental impacts.

Change in Impacts -- A smaller project could have a shorter construction duration and fewer or smaller buildings and therefore may result in proportionally reduced impacts to air quality, biology, geology, hydrology, GHG, noise, and utilities. A smaller project could reduce the number of new employees added to the CMHC program. If this occurs, the Reduced Project Size Alternative would generate less vehicle trips generated at the project site but would not alter the VMT per worker. The VMT per employee (30.96) would remain above the regional average (21.80) and, therefore, exceed the County's standard of 15% less than the regional average (18.53). Therefore, this alternative would not reduce or eliminate the project's significant VMT impact. A Reduced Project Size Alternative would shrink the development footprint possibly allowing for the project buildings to be setback from the hillside. This could reduce, but would not eliminate, the project's significant impact of exacerbated fire risk. The significant traffic and wildfire risk impacts identified in EIR sections 10.4.3 and 12.3.3 would remain unavoidable and significant.

Obtain Objectives – A reduced sized project would allow the County to obtain most of the project objectives. The aging CMHC building would be replaced with new buildings that meet current codes and regulations. The cost of building maintenance would be reduced. New facility buildings and programs would be designed based on current best practices and receive federal reimbursement funds. Effective treatment would lead to reduced length of stay and improved working and living conditions for staff and patients. A reduced scale CMHC building would reduce the number of MHRC and/or Co-Housing beds available to County residents and does not meet the County's objective of improved access and patient flow through the healthcare delivery system.

***The Reduced Size Project Alternative would proportionally reduce most environmental impacts. Impacts would still remain potentially significant, and all identified mitigation measures would still be required. Given that the Reduced Size Project Alternative could still obtain most of the project objectives and would slightly reduce most environmental impacts, the reduced size project is considered to be the environmentally superior alternative under CEQA Guidelines section 15126.6(e)(2).***

## **13.3 ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

The purpose of the alternatives analysis is to identify project alternatives that “would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project[.]” (CEQA Guidelines section 15126.6(a)). The discussion above presents alternatives to the proposed project based on the identified potentially significant impacts.

The Reduced Size Project Alternative is considered the environmentally superior alternative. This alternative would allow the County to obtain most of the project objectives and partially reduce most environmental impacts. A reduced scale project alternative would reduce the number of residential beds and would not achieve the project objective of improved access and patient flow through the healthcare delivery system. Further, this alternative does not eliminate the unavoidable significant impacts to transportation and wildfire risk. As a result, the Reduced Size Project Alternative is not preferred.

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## CHAPTER 14 CEQA REQUIRED ASSESSMENTS

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### 14.1 POTENTIALLY UNAVOIDABLE SIGNIFICANT IMPACTS

CEQA Guidelines section 15126(a) and (b) require an EIR to discuss the significant environmental effects of the proposed project and the significant environmental effects which cannot be avoided if the proposed project is implemented.

All potentially significant impacts of the project are identified in Chapters 3.0 through 12.0 of this EIR along with mitigation measures that would reduce or avoid these impacts.

Even with the application of mitigation measures, the proposed Cordilleras Health System Replacement Project, if implemented, would result in two unavoidable, significant impacts as follows.

**Impact TRA-1:** The proposed project would add 18 new employees to an area of the County where VMT per worker (30.96) exceeds the MTC regional daily average VMT for the Bay Area workers (21.80). As a result, the new employees at Cordilleras project would generate VMT at a rate that exceeds the County's significance threshold, which is 15% less than the daily regional average VMT (18.53 miles per worker).

The County implements Transportation Demand Measures (TDMs) such as encouraging use of public transit, ride share, and vanpools. Due to the project's remote location, staffing shift requirements, and limited transit service in the project area, there are no feasible mitigation measures to reduce the project VMT from 30.96 to 18.53 (a 40 percent reduction) to meet the County's VMT standard for new development (Hexagon 2019). Therefore, Impact TRA-1 is considered a *significant and unavoidable impact* of the proposed project.

**Impact WFR-1:** The project would exacerbate existing wildfire risks by reducing soil moisture through tree removal, installing the anti-debris barriers that could accumulate flammable material thereby increasing the fuel load as well as funneling fires into the project area, and constructing buildings adjacent to steep slopes, which could make firefighting more difficult.

Given the high fire hazard rating of the project property location and surrounding hillsides, any development on the project site which encroaches into the hillside is determined by Cal Fire to exacerbate wildfire risk. The County has incorporated multiple measures into the project design including a fire loop access road, new water supply tank to meet fire flow requirements, fire-resistant building materials, and implementation of defensible space zones (Mitigation Measure WFR-1) to reduce fuel loads and reduce wildfire risk (Mitigation Measure WFR-1). Although these measures reduce wildfire risk, by Cal Fire's determination the wildfire risk remains exacerbated. This impact is unavoidable given the nature of the project and the geography of its location.

The current Cordilleras facility is located at the mouth of a small canyon surrounding by steep wooded hills. Replacing the existing facility, a former tuberculosis hospital, with four smaller group home buildings (MHRCs) and a Co-Housing building necessitates broadening the footprint of development toward the slopes. Multiple alternatives have been considered as described in Chapter 13 and one MHRC building has already been eliminated from the original design due to hillside encroachment and spatial constraints resulting in the loss of potential expansion of treatment capacity. Further building reduction would result in a loss of existing treatment capacity. Given the County's need to maintain existing treatment capacity and provide

a mental health treatment program aligned with current best care treatment practices, hillside encroachment is unavoidable, and therefore exacerbated wildfire risk is a ***significant and unavoidable impact*** of the project.

## 14.2 GROWTH INDUCEMENT

A project is considered to be growth-inducing if it fosters economic or population growth beyond the boundaries of the project site by, for example, the extension of urban services or transportation infrastructure to an underserved area, or by the removal of major constraints to development. The proposed project involves reconstruction of an existing mental health facility in its same location. The project represents a continuation of historic and existing operations. Residential capacity would increase by 4 and employee staffing would increase by 18 full-time equivalents. The increase in staffing would not create a significant new demand for housing. In addition, the project would not expand infrastructure capacities that would support development or community growth outside of the project site. Thus, the project is not considered to be growth inducing; ***no impact*** would occur.

## 14.3 CUMULATIVE PROJECTS AND IMPACTS

CEQA requires that an EIR evaluate a project's cumulative impacts. Cumulative impacts are the project's impacts combined with the impacts of other related past, present, and reasonably foreseeable future projects. As set forth in the CEQA Guidelines, the discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. As stated in CEQA, "a project may have a significant effect on the environment if the possible effects of a project are individually limited but cumulatively considerable." (Public Resources Code §21083(b))

According to the CEQA Guidelines:

"Cumulative impacts refer to two or more individual effects which, when considered together, are considerable and which compound or increase other environmental impacts.

- a. The individual effects may be changes resulting from a single project or a number of separate projects.
- b. The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (14 CCR §15355).

In addition, as stated in CEQA Guidelines, it should be noted that:

"The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable" (14 CCR §15064(h)(4)).

There are no proposed projects in the immediate vicinity of the Cordilleras site that would have overlapping impacts with the proposed project. As such, with the exception of regional transportation considerations, the project does not combine with other projects to create cumulative impacts.

Cumulative impact analyses are provided for each environmental discipline in their respective chapters (Chapters 3 through 12) or below under Impacts Found to be Not Significant. The EIR has determined the project would result in cumulatively significant transportation impact by increasing VMT above County regional standards. Therefore, the project contribution to regional congestion is a significant cumulative impact. The impact is unavoidable as described in EIR sections 10.4.3 and 14.1

## **14.4 IMPACTS FOUND TO BE NOT SIGNIFICANT**

### **14.4.1 Aesthetics**

The proposed project buildings would be constructed on the lowest elevations of a box canyon surrounded on all sides by hills and wooded areas. The new buildings would be located in approximately the same location as the existing CMHC facility. As such, the new buildings would not generally be visible from surrounding public lands; there are no existing residential areas or water bodies in the area surrounding the site. The site is not near a vista point and the project would not impact a scenic vista.

The closest state scenic highway to the projects site is I-280, located approximately 0.5 mile to the west of the site. The site is not visible from I-280 or any other state scenic highway. Therefore, the proposed project would not damage scenic resources within a state scenic highway.

Edgewood Road is a County designated Scenic Corridor. The project site is visible from the portion of Edgewood Road that passes approximately 200 feet to the south of the site. However, the site is already developed with the existing CMHC facility and other facilities. Grading would substantially change the current appearance of the site, and the new water tank would be visible. Views into the project site from Edgewood Road are limited and brief to passing drivers. Because views are limited and the site is already developed, the project changes to the site would not significantly impact a County Scenic Corridor.

Views of the project site from surrounding areas are generally blocked by woodland and intervening topography. As such, the proposed project would not significantly degrade the visual character or quality of public views of the project site or its surroundings. The project is located in unincorporated San Mateo County, and therefore regulations governing scenic quality in an urbanized area do not apply to the project. The project site is in the Resource Conservation District, which does not have a Design Review overlay.

The proposed new CMHC facility would include exterior lighting for safety and comfort. The lights would be designed for light pollution reduction, consistent with the requirements of LEED credit SS8. The off-site visibility of the exterior lighting is expected to be limited by the low setting of the new facility and the surrounding topography and vegetation. There are no houses or other structures for human habitation in the areas surrounding the site that could be impacted by lighting at the site. Therefore, the project would not create a new source of significant light or glare that would adversely affect day or nighttime views in the area.

The project site itself has natural scenic qualities including Cordilleras Creek and its tributaries, wooded areas and hillsides. The proposed project would avoid these scenic qualities to the extent possible but would require building adjacent to the creek, as well as substantial hillside cut and tree removal. These impacts would be minimized by design of the buildings to be compatible with the surrounding wooded area and replacement of all removed trees. The project would not

impact the natural scenic qualities of surrounding open space lands and would not be visible from these lands.

As a result, the proposed project would have *less-than-significant* impacts on aesthetic resources. No other projects are proposed in the project vicinity or within the same viewshed as the project from the County Scenic Corridor along Edgewood Road. As a result, the project would have *no cumulative impact* on aesthetic resources.

#### 14.4.2 Agricultural and Forest Resources

The project would not result in the conversion of Farmland to a non-agricultural use or result in the loss of agricultural land. The proposed project would not impact Prime Farmland, Unique Farmland or Farmland of Statewide Importance. The project site is mapped as “Other Land” on the San Mateo County Important Farmland 2012 map developed by the California Department of Conservation, Division of Land Resource Protection’s Farmland Mapping and Monitoring Program (CDOC 2012). The project site is not zoned for agricultural use, is not subject to an Open Space Easement, and is not under a Williamson Act contract (CDOC 2007). The project site is not within the coastal zone and thus would not convert or divide lands identified as Class I or Class II Agriculture Soils or Class III Soils rated good or very good for artichokes or Brussels sprouts. In addition, the project would not convert forest land to a non-forest use. The project site is not zoned as forest land, timberland or timberland production. Thus, the proposed project would have *no impact* and *no cumulative impact* on agricultural or forestry resources.

#### 14.4.1 Cultural Resources

The CMHC building was evaluated for potential eligibility as a historic resource. The historic architecture evaluation report (Hill 2015) concludes the CMHC building does not have significant associations with San Mateo County medical history, is not associated with significant figures in local history, and is not a significant example of hospital architecture in San Mateo County. The CMHC retains historic integrity from its original construction but it is not significant under California Register criteria. Thus, it is not an historic resource for purposes of compliance with CEQA. Other historical resources within the 0.25-mile study area are not within line of sight of the CHHC building, and their historic character would not be affected as part of the proposed project. Therefore, the project would have *no impact* to historic resources.

The Cordilleras Health System Replacement Project is not located in an area known to contain archaeological or cultural resources. There is a low archaeological sensitivity within the project area (Basin Research Associates 2014) and a minimal chance of the unanticipated discovery of archaeological resources or human remains. In the unlikely event of unanticipated discovery, BMPs required by the County (Table 2-4) regarding cultural resources and adherence to California Health and Safety Code section 7070.5 and section 5097.98 regarding human remains would safeguard unknown buried resources. Therefore, the project would have a *less-than-significant* impact and *no cumulative impact* on cultural resources.

#### 14.4.2 Energy

In general, California’s per capita energy consumption is relatively low, in part due to mild weather that reduces energy demand for heating and cooling, and in part due to the government’s proactive energy-efficiency programs and standards. According to the California Energy Commission’s (CEC) 2015 Integrated Energy Policy Report, Californians consumed about 280,500 gigawatt hours (GWh) of electricity in 2014 and 13,240 million British thermal units (BTU) of natural gas in 2013. The CEC estimates that by 2025, California’s electricity consumption will reach between 297,618 GWh and 322,266 GWh, an annual average growth



rate of 0.54 to 1.27 percent (CEC 2015), and natural gas consumption is expected to reach between 12,673 million and 13,731 million BTU by 2024, an average annual growth rate of -0.4 to 0.33 percent (CEC 2015).

In 2018, total electricity use in San Mateo County was 4,226 million kilowatt hours (kWh), including 2,702 million kWh of consumption for non-residential land uses (CEC 2019a). Natural gas consumption was 210 million therms in 2018, including 95 million therms from non-residential uses (CEC 2019b).

Energy conservation refers to efforts made to reduce energy consumption to preserve resources for the future and reduce pollution. It may involve diversifying energy sources to include renewable energy, such as solar power, wind power, wave power, geothermal power, and tidal power, as well as the adoption of technologies that improve energy efficiency and adoption of green building practices. Energy conservation can be achieved through increases in efficiency in conjunction with decreased energy consumption and/or reduced consumption from conventional energy sources.

The project is designed to be a Zero Net Energy (ZNE) facility. ZNE is based on the amount of energy produced on-site being equal to the amount of electrical and gas energy consumed by the project annually. The following are examples of some of the energy saving strategies that have been incorporated into the design of the building.

- Focus on the Envelope of the Buildings to minimize window openings.
- Minimize glazing in non-client areas as much as possible.
- Providing LED lighting and lighting control systems to reduce the lighting power density below the code maximum values.
- Use of Variable Refrigerant Flow HVAC system with heat recovery to reduce the electrical energy consumption of the facility.
- Use of an energy recovery ventilation system to provide ventilation air and make-up air to the building.
- Use of natural ventilation within the building to minimize the use of the HVAC system when outside air conditions are ideal for cooling

The construction activities would require the use of construction equipment and generate construction-related vehicle trips that would combust fuel, primarily diesel and gasoline. The use of this fuel energy is necessary to demolish the existing building and construct the new facility and is not wasteful.

The building design and operation would meet the LEED certification, using version 4, and ZNE. By meeting these design specifications, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

As a result, the project would have a *less-than-significant impact* and *no cumulative impact* on energy resources.

#### 14.4.3 Land Use and Planning

The project site is located at 200 Edmonds Road in unincorporated San Mateo County and is in a County-designated Urban Area just east of the Urban/Rural Boundary shown in the County's

General Plan. The San Mateo County General Plan Land Use Designation for the project site is General Open Space, which is intended for:

*“General Open Space Resource management and production uses including but not limited to agriculture, oil and gas exploration. Recreation uses including but not limited to stables and riding academies; and residential uses including but not limited to non-transient housing. Service uses including but not limited to hotels and motels.”* (San Mateo County 1986)

The zoning designation of the site is Resource Management. The maximum height in the Resource Management District is three stories (36 feet), and the minimum building setbacks are 50 feet (front), 20 feet (sides) and 20 feet (rear). The site is surrounded by open space and recreation land uses: it is bordered to the north, east and west by the Pulgas Ridge Open Space Preserve and to the south by Edgewood Park and Natural Preserve.

The project is the replacement of the existing CMHC facility to meet current best practices for mental health care and to meet current safety regulations. There are no existing residential communities surrounding the project site and the project does not include major roads or utilities that could create barriers to an established community. The project would be designed to better serve the existing patient community on the site. The proposed project would not physically divide an established community.

The proposed project would not conflict with the San Mateo County General Plan or the County Ordinance Code with implementation of the mitigation measures contained in this document. All potential impacts would comply with applicable regulations; the proposed project would not result in any significant and unavoidable impacts that could conflict with local regulations.

The project may occasionally result in the congregation of more than 50 CMHC facility staff, patients and their guests. However, the congregations would remain on the project site and are not expected to occur more frequently than under existing conditions.

The project would not result in activities not currently found within the community as the land use and activities at the site would not change after project completion.

The project would not encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas. The project would not change the existing land use of the site and would not include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities.

The proposed project would not induce population growth and thus would not create a new demand for housing.

As a result, the project would have ***no impact*** and ***no cumulative impact*** on land use and planning.

#### **14.4.4 Mineral Resources**

Mineral resources in San Mateo County include chromite, clay, expansible shale, gemstones, limestone and shells, mercury, mineral water, oil and gas, salines, sand and gravel, sands (specialty), stone (crushed and broken) and stone (dimension). Seven of these minerals: chromite, clay, expansible shale, mercury, sand and gravel, sands (specialty), and stone (dimension), are not likely to be used primarily because of limited quantities, urbanization or economic infeasibility. Of the remaining minerals which have the potential for utilization, gemstones and oil and gas are identified as small resources or resources usable only at a high price. Mineral water, salines and crushed stone are classified as significant resources being used.

Limestone and shells similarly classified but were projected by the General Plan to be exhausted by 1995. No geothermal resources have been identified in San Mateo County (San Mateo County 1986).

No mineral resources have been identified on or near the project site (San Mateo County General Plan Mineral Resources map, 1986). Therefore, the proposed project would have ***no impact*** and ***no cumulative impact*** on mineral resources.

#### **14.4.5 Population and Housing**

The proposed CMHC facility would not induce substantial population growth in the area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure). The project would replace the existing CMHC facility with a new CMHC facility that meets current best practices for mental health treatment and complies with current safety regulations. Residential capacity and employee staffing would slightly increase. However, the project would not expand infrastructure capacities that would support development or community growth outside of the project site.

The proposed would not displace any existing housing or people, necessitating the construction of replacement housing elsewhere. The existing CMHC facility would be demolished, but the new CMHC facility would accommodate all of the existing patients as well as up to four additional patients. Therefore, the proposed project would have ***no impact*** and ***no cumulative impact*** on population and housing.

#### **14.4.6 Public Services**

Public services are provided to the project site by the following agencies and organizations:

- Fire protection is provided to the site by Cal Fire.
- Police protection is provided to the site by the San Mateo County Sheriff's Office, located at 400 County Center in Redwood City.
- The project site is in the Redwood City Elementary School District and the Sequoia Union High School District.

The proposed project would not require the provision of new or physically altered fire protection facilities. The proposed project is the replacement of the existing CMHC facility at the same location; fire protection for the new facility would be similar to that required for the existing facility. The proposed project would increase water pressure to meet the current CFC requirements of 1,500 gallons per minute (gpm), and would comply with applicable policies in Chapter 15, Natural Hazards of the San Mateo County General Plan, and Chapter 3.84, Fire Protection Regulations of the San Mateo County Code to minimize fire hazards, including maintenance of a defensible space around the new buildings as identified in Mitigation Measure WFR-1 and compliance with the CFC, among other requirements.

The proposed project would not require the provision of new or physically altered police protection facilities. The proposed project is the replacement of the existing CMHC facility at the same location; police protection for the new facility would be similar to that required for the existing facility. The slight increase in residential capacity and employee staffing at the new facility is not expected to require additional police protection services beyond existing conditions.

The proposed project would not require the provision of new or physically altered schools. The proposed project is the replacement of an existing mental health facility; the project would not induce population growth or cause an increase school enrolment in the area.

The proposed project would not require the provision of new or physically altered parks. The proposed project is the replacement of an existing mental health facility; the project would not induce population growth or cause an increase in use of parks in the area.

The proposed project would not require the provision of any other new or physically altered public facilities or utilities. The proposed new CMHC facility would serve four additional patients compared to the existing capacity, with increased staffing levels to better meet the needs of existing and future patients. Therefore, the project would reduce the need for other new or physically altered public facilities that serve low-income mental health patients in the area.

As a result, the project would have a ***less-than-significant impact*** on public services. ***No cumulative impact*** on public services would occur.

#### **14.4.7 Recreation**

The project site is bordered by the Pulgas Ridge Open Space Preserve to the north, east and west and by Edgewood Park and Natural Preserve to the south. There are several other parks and open spaces in the area, including Big Canyon Park, Crestview Park, Eaton Park and Highlands Park to the east and open space surrounding the Crystal Springs Reservoir to the west.

The proposed project is the replacement of an existing mental health facility at the same location; the project would not induce population growth or cause an increase in use of existing neighborhood or regional parks or of other recreational facilities in the area. The project would have ***no impact*** and ***no cumulative impact*** on recreation.

#### **14.4.8 Tribal Cultural Resources**

The Native American Heritage Commission record search was negative for Native American resources on or adjacent to the project site.

As shown by the Cultural Resources Review, there is a low archaeological sensitivity within the project area, and thus a minimal chance of the unanticipated discovery of tribal cultural resources. In the unlikely event of unanticipated discovery, adherence to existing codes and regulations in addition to following BMPs would safeguard unknown buried resources. The project would have a ***less-than-significant impact*** and ***no cumulative impact*** on tribal cultural resources.

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