

**City College of San Francisco
Ocean Avenue (Main) Campus Infrastructure
Upgrade Project

Initial Study and
Proposed Mitigated Negative Declaration**

The following Initial Study has been prepared in compliance with the
California Environmental Quality Act.

Prepared For:

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INTRODUCTION

Initial Study

Pursuant to Section 15063 of the *California Environmental Quality Act (CEQA) Guidelines* (Title 14, California Code of Regulations, Sections 15000 et seq.), an Initial Study is a preliminary environmental analysis that is used by the lead agency (the public agency principally responsible for approving or carrying out the proposed project) as a basis for determining whether an Environmental Impact Report, a Mitigated Negative Declaration, or a Negative Declaration is required for a project. The *State CEQA Guidelines* require that an Initial Study contain a project description, description of environmental setting, identification of environmental effects by checklist or other similar form, explanation of environmental effects, discussion of mitigation for significant environmental effects, evaluation of the project's consistency with existing, applicable land use controls, and the name of persons who prepared the study.

The purpose of this Initial Study is to evaluate the potential environmental impacts of the proposed Ocean Avenue (Main) Campus Infrastructure Upgrade Project ("proposed project") to determine what level of additional environmental review, if any, is appropriate. As shown in the Determination in Section IV of this document and based on the analysis contained in this Initial Study, it has been determined that the proposed project would not result in any significant impacts that cannot be mitigated to less than significant levels. The analysis contained in this Initial Study concludes that the proposed project would result in the following categories of impacts, depending on the environmental resource involved: no impact; less than significant impact; or less than significant impact with the implementation of project-specific mitigation measures. Therefore, preparation of a Mitigated Negative Declaration is appropriate (the Proposed Mitigated Negative Declaration is presented in **Appendix A**).

Public and Agency Review

This Initial Study/Proposed Mitigated Negative Declaration will be circulated for public and agency review from March 12, 2019 to April 11, 2019. Copies of this document are available for review at the Rosenberg Library, 50 Frida Kahlo Way, San Francisco, CA 94112800, and on the District's website at http://www.ccsf.edu/en/about-city-college/administration/vcfa/facilities_planning/Facilities.html. Comments on this Initial Study/Proposed Mitigated Negative Declaration must be received no later than 5:00 PM on April 11, 2019 and can be mailed or emailed to:

Dr. Rueben Smith
Senior Vice Chancellor of Facilities, Capital Planning, and Public Safety
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Organization of the Initial Study

This Initial Study is organized into the following sections.

Section I – Project Information: provides summary background information about the proposed project, including project location, lead agency, and contact information.

Section II – Project Location and Description: includes a description of the proposed project, including the need for the projects, the project objectives, and the elements included in the projects.

Section III – Environmental Factors Potentially Affected: identifies what environmental resources, if any, would involve at least one significant or potentially significant impact that cannot be reduced to a less than significant level.

Section IV – Determination: indicates whether impacts associated with the proposed project would be significant, and what, if any, additional environmental documentation is required.

Section V – Evaluation of Environmental Impacts: contains the Environmental Checklist form for each resource and presents an explanation of all checklist answers. The checklist is used to assist in evaluating the potential environmental impacts of the proposed project and determining which impacts, if any, need to be further evaluated in an EIR.

Section VI – Supporting Information Sources: lists references used in the preparation of this document.

Section VII – Initial Study Preparers: lists the names of individuals involved in the preparation of this document.

Appendices: present the technical studies used in the preparation of this Initial Study.

I. PROJECT INFORMATION

1. Project title:

Ocean Avenue (Main) Campus Infrastructure Upgrade Project

2. Lead agency name and address:

San Francisco Community College District
50 Frida Kahlo Way
San Francisco, CA 94112

3. Contact person and phone number:

Dr. Rueben Smith
Senior Vice Chancellor of Facilities, Capital Planning, and Public Safety
(415) 239-3495

4. Project location:

Ocean Avenue (Main) Campus
50 Frida Kahlo Way, San Francisco, CA 94112

5. Project sponsor's name and address:

Same as Lead Agency

6. City and County of San Francisco General Plan Designation:

Public

7. City and County of San Francisco Zoning:

P-Public

II. PROJECT LOCATION AND DESCRIPTION

1. Description of Project:

Location: As illustrated in **Figure 1, Regional Location**, the City College of San Francisco's main campus is located within the Balboa Park Station area of the City and County of San Francisco, approximately four miles south of the San Francisco Civic Center. As shown in **Figure 2, Site Vicinity**, the campus is immediately west of Interstate 280 (I-280) and is bounded by Judson Avenue to the north, I-280 to the east, Ocean Avenue to the south, and Balboa Reservoir to the west. Frida Kahlo Way, which runs from north to south, bisects the western portion of campus. Overall the campus encompasses about 78 acres. The Assessor's Block and Lot number for the portion of campus to the east of Frida Kahlo Way (67 acres) is 3179/010 while the Assessor's Block and Lot number for the portion of campus to the west of Frida Kahlo Way (10.7 acres) is 3180/001.

Existing Conditions: The main campus was originally constructed and occupied at its current location in the early 1950's. This included the utility infrastructure for the campus. Although buildings have been added and repairs made over the years, much of the campus is still served by the original utility systems built in the 1950s which have exceeded their useful life. Below is a description of each system that is currently serving the campus.

Domestic/Fire Water Systems

The main campus is currently served by the City and County of San Francisco municipal water system through one 6-inch diameter supply line and one 8-inch diameter loop line, both of which are connected to an existing 16-inch water main along Frida Kahlo Way. A 6-inch water line also exists along the eastern portion of campus that is connected to an existing water main on Havelock Street. The 8-inch line provides both domestic and fire water service while the 6-inch line provides only domestic water service.

Sanitary Sewer Systems

The existing sanitary sewer system consists of a network of 4-inch to 15-inch diameter lines that were constructed in the early 1950's. A 15-inch diameter sewer line runs east-to-west through the main campus, starting at the Cloud Hall Building and ties into the existing 39-inch combined City sewer main on Frida Kahlo Way. An 8-inch diameter sewer line runs south-to-north along the eastern area of the campus and connects to an existing 8-inch City sewer main on Havelock Street. No upgrades have been performed to the existing on-site sewer system although routine maintenance and numerous repairs have been performed on the aging system. Some of the buildings on campus are served by sewer lift stations where gravity sewers could not be accommodated due to topography. These lift stations are used to pump the sewage flow from the lower elevations of buildings to a point of connection to the gravity sewer system.

Due to a lack of record drawing information, the exact route of the on-site sewer system is unknown, but the system likely flows to the east and west from the high point of the campus, at the Cloud Hall Building. The on-site sanitary sewage system is part of a City-wide combined sewer system and conveys storm water runoff from the on-site storm drainage system in addition to the sanitary sewer flow.

Storm Drainage Systems

The existing storm drain system is comprised of 4-inch to 15-inch diameter lines. These pipes consist of roof drain lines and a pipe network of interconnected catch basins and manholes. Collection of the site surface runoff is achieved through area drains and catch basins within the roadway surfaces and throughout the lawn and planter areas. Due to the topography of the main campus, the storm drain system is split along the east side of Cloud Circle Drive. Surface runoff to the west of Cloud Circle Drive and roof drain runoff from buildings to the west of Cloud Circle Drive is collected and discharged to the 39-inch combined sewer main on Frida Kahlo Way. All surface runoff to the east of Cloud Hall Drive and the roof runoff from buildings to the east of Cloud Circle Drive is collected and discharged to the combined sewer main on Havelock Street. Due to a lack of information, the size of the existing combined sewer main on Havelock Street is unknown. In addition, it is not known if another overflow storm drain connection exists on any of the adjacent right-of-ways.

Natural Gas Distribution System

The main campus has two main gas meters. The meter, which is located on the north of the Cloud Hall building, serves many of the existing buildings on campus. The meter along with the gas lines were originally installed 60 years ago. The other meter, which is located on the west of Wellness Center, was installed in 2008. This meter serves the Wellness Center and the pool.

Electrical Distribution System

The primary and secondary electrical power distribution infrastructure system on main campus was constructed in the 1940s and expanded in the 1960s. Additional buildings have been added since that time and placed increased demand on the existing system. Many of the buildings on campus have oil-filled electrical equipment. The existing utility company transformer substation and the primary and secondary conductors were installed in the early 1950's.

Site Lighting System

Currently, the site lighting system on main campus consists of various pole mounted fixtures from cobra head type in parking lots to shoebox style luminaries in walking areas. Building mounted wall packs are located in some areas. These fixtures vary in age, wattage and manufacturer and range in condition from fair to poor.

Telecommunications Systems/Life-Safety Systems

None of the older fire alarm systems are currently monitored by a central station. There does not appear to be any visual devices for access compliance and most of the parts are no longer made. Many of the devices and systems are reported to be not functional. Various areas appear to have newer devices installed as part of recent remodel projects, such as the Business Office. A few of the buildings such as Cloud Hall have newer listed fire alarm systems.

There is no centrally monitored safety or security system presently installed on the main campus. The newer buildings have individual, remotely monitored intrusion detection systems. There are no electronic surveillance systems or Security Alert/Notification Systems (Emergency Code Blue) presently installed on the campus for security.

The Public Address, Clock, and Cable Television (CATV) systems on main campus are currently non-functional. The basic data and voice communication system is nonfunctional but has been selectively augmented in a piecemeal “retrofit” manner with new data cabling and wireless technology.

The existing telephone system is the only available emergency communication means available to reach throughout the entirety of the main campus. In the event of an emergency, options available for communication with students, staff, visitors and maintenance personnel are quite limited. Conversely, there is no available means for requesting assistance generally available to any persons on the campus—Students, Faculty, Staff or Public.

Chilled Water System

The main campus east of Frida Kahlo Way does not have a central plant providing chilled water. The new (completed 2010) Multi-Use building located west of Frida Kahlo Way has a geothermal system with almost 1,000 tons of chilled water (CHW) capacity identified for the Multi-Use building and four future buildings. Chillers are currently installed in the following buildings:

- Batmale Hall – 200 ton air cooled chiller (1978);
- Creative Arts Extension – 125 ton water cooled (date unknown);
- Cloud Hall – 100 ton air cooled (1998); and
- Library – 400 ton water cooled (1995).

Heating Systems

A significant portion of the main campus is served from a central high pressure (100 psi) steam boiler heating plant in Cloud Hall through an underground piping system. This system was installed in the early 1950s. Other boilers and heating systems on campus include:

- Batmale Hall – One hot water boiler (3,200,000 Btuh);
- Conlan Hall – Three hot water boilers (1,575,000 Btuh each);
- Ornamental Horticulture – One hot water boiler (1,000,000 Btuh);
- Student Union – Five gas fired furnaces (250-400,000 Btuh each);
- Student Health – One Hot Water Boiler (750,000 Btuh); and
- Library – Two hot water boilers (2,700,000 Btuh each).

Project Features and Operations: The proposed project involves a comprehensive utility upgrade involving all the systems at the same time in order to take advantage of coordination and cost efficiencies. To take advantage of common trenching and to reduce installation costs, the proposed upgrades will be installed in a single joint backbone trench that will be approximately 4,500 feet in length. This trench will include domestic water, fire water, chilled water, sewer, storm drain, gas, and electric telecommunications lines and be approximately 20 wide and six feet deep. Branch lines for each utility will extend from the joint trench to serve individual buildings. These lines will vary in length with branch gas lines extending a total of 500 feet, water, sewer, and storm drain branch lines extending at total of 1,500 feet each, and branch electrical and telecommunication lines extending a total of 2,500 feet. The path of the proposed joint backbone trench is provided in **Figure 3, Conceptual Utility Corridor**. In addition, the upgrade will also be performed in phases to allow continued access and operation of the main campus during construction. The details on

the size and extent of the upgrade to each utility system are provided below.

Domestic/Fire Water Systems

Due to the age and reliability of the on-site main campus water distribution system, the entire system will be replaced with new piping and adequate isolation valves to allow maintenance and proper protection of the system. A separate fire-water distribution system will also be installed to provide adequate flow and pressure for automatic fire sprinkler systems and fire hydrants on campus.

To serve the western portion of the main campus, a 12-inch diameter looped fire water line will be installed and connect to the 16-inch City water main on Frida Kahlo Way for fire protection and a new 10-inch diameter looped domestic water line will be installed and connect to the 16-inch City water main for domestic water service. To serve the eastern portion of the campus, a new 12-inch diameter fire water line will be installed that would connect to existing water mains on Havelock Street and Ocean Avenue for fire protection and a new 10-inch diameter domestic water will be installed and connect to the existing water mains on Havelock Street and Ocean Avenue for domestic water service. New hydrants are to be located throughout the campus. All new water piping, metering devices, backflow prevention devices, double check valve assemblies, hydrants and other new water infrastructure must meet the requirements of all applicable regulatory agencies.

Sanitary Sewer Systems

The entire sanitary sewer system on main campus will be replaced with a system that will meet current capacity requirements and account for future growth. This would include replacing all underground piping and associated sanitary components that have exceeded their useful service life, especially pressurized system components and lift stations. All lift station replacement work would be performed in accordance with the latest edition of the California State Building and Plumbing Code.

In addition, some significant changes in the routing of the existing piping will be required, to effectively remove sewage flow and separate the sanitary sewage from the storm water runoff. Oil/water separators and grease interceptors must be installed for all locations that they are required for optimal operation and maintenance of the new system. The on-site sewer system will be separated from the on-site storm drain system. Separate connections will be made to the combined sewer mains located on Frida Kahlo Way and Havelock Street.

Storm Drainage Systems

A new underground storm drainage system will be installed. In addition, the routing of the system will be modified to effectively convey the storm water runoff and to separate the storm water runoff from the sewage flow. Furthermore, several catch basins will be added to effectively collect and convey the storm water runoff. The runoff from the western portion of the site will be connected to the 39-inch combined sewer main in Frida Kahlo Way and the runoff from the eastern portion of the site will be connected to the existing combined sewer main in Havelock Street.

Natural Gas Distribution System

Natural gas lines on main campus will be replaced and a new gas loop piping system to the buildings with 5 psi medium pressure gas system, gas regulator and seismic valve will be installed. No upgrade to the gas meter near the Wellness Center will occur.

Electrical Distribution System

New, concrete encased conduits duct banks, new vaults, new 12 kilovolt (kv) primary conductors, service equipment and 480-volt secondary conductors will be installed. In addition. A new 12 kv line will be installed to provide power to a new 2,500 kilovolt- ampere (KVA) transformer substation for the proposed CHW Plant.

Site Lighting System

Existing lighting will be replaced, and additional fixtures will be installed to increase illumination levels to acceptable levels for both access and security. In addition, new conduits, conductors and a lighting control system will be installed as well. The new system will use energy efficient, dimmable LED lighting fixtures that can be controlled to provide additional energy savings at night, and will provide the minimum amount of lighting required for security.

Telecommunications Systems/Life-Safety Systems

New, integrated Security, Safety and Communication Systems will be installed. These systems would include a fully automatic fire alarm system, with centralized and addressable campus reporting, a classroom security and communication system, code blue interactive voice system and campus-wide video surveillance cameras. The security and safety system should be scalable to allow for future technology and/or capability expansion.

A central conduit/fiber/copper cable system consisting of four 5-inch diameter main conduits with vaults, pull-boxes and hand-holes as required for 3-inch feeders will be installed to allow for terminal installation of data, voice communication and CATV feeds. This system would also accommodate the cabling requirements for the addressable automatic fire alarm system as well as the classroom security system and the campus energy management system.

Chilled Water System

A new Chilled Water (CHW) Central Plant will be installed between the Visual Arts Building and Batmale Hall to replace the old and inefficient chillers currently serving some of the buildings on main campus and to extend chilled water to the remaining buildings on campus. The new CHW plant would include three chillers and have a capacity of up to 3,000 tons.

Heating Systems

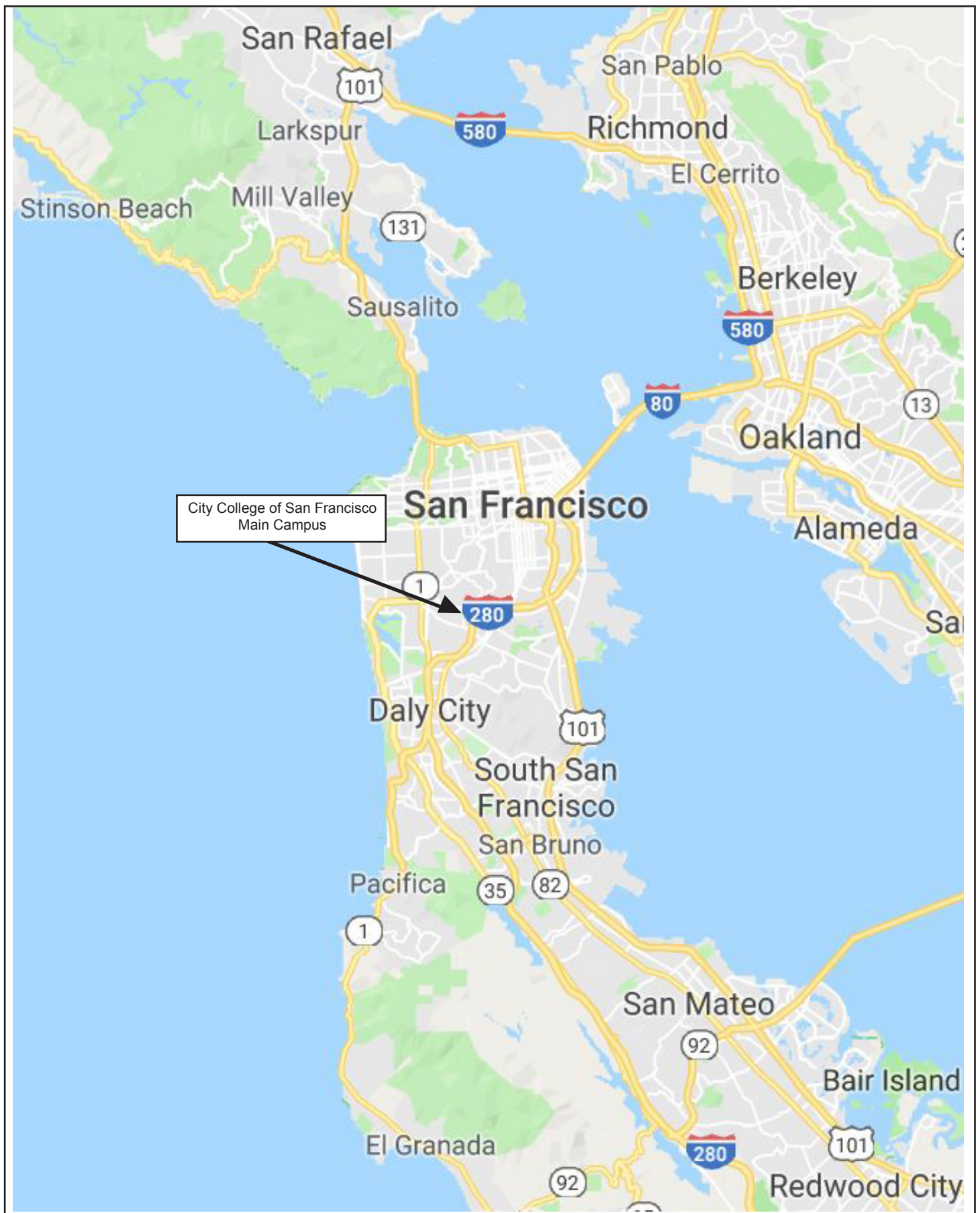
The existing steam plant in Cloud Hall will be replaced with new hot water boilers located within the buildings they serve. The new boilers would be under 2,000,000 Btuh in order to minimize BAAQMD requirements and provide higher efficiencies.

2. **Surrounding Land Uses and Environmental Setting:** The main campus is located in an urban setting and is surrounded by a variety of land uses. Residential uses are adjacent to the campus across Ocean Avenue, Judson Avenue, and Havelock Street. The Balboa Reservoir separates the campus from residential uses to the west. Balboa Park is immediately east of I-280. There are commercial uses along Ocean Avenue west of Frida Kahlo Way, and two private high schools (Lick Wilmerding and Bishop Riordan) are immediately adjacent to the campus.
3. **Discretionary approval authority and other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):**

As a public agency principally responsible for approving or carrying out the proposed project, the San Francisco Community College District is the Lead Agency under CEQA. The San Francisco Community College District Board of Trustees would be responsible for reviewing and certifying the adequacy of the environmental document and approving the proposed project.

The following additional agencies would be involved in discretionary approvals and permits required for various project components:

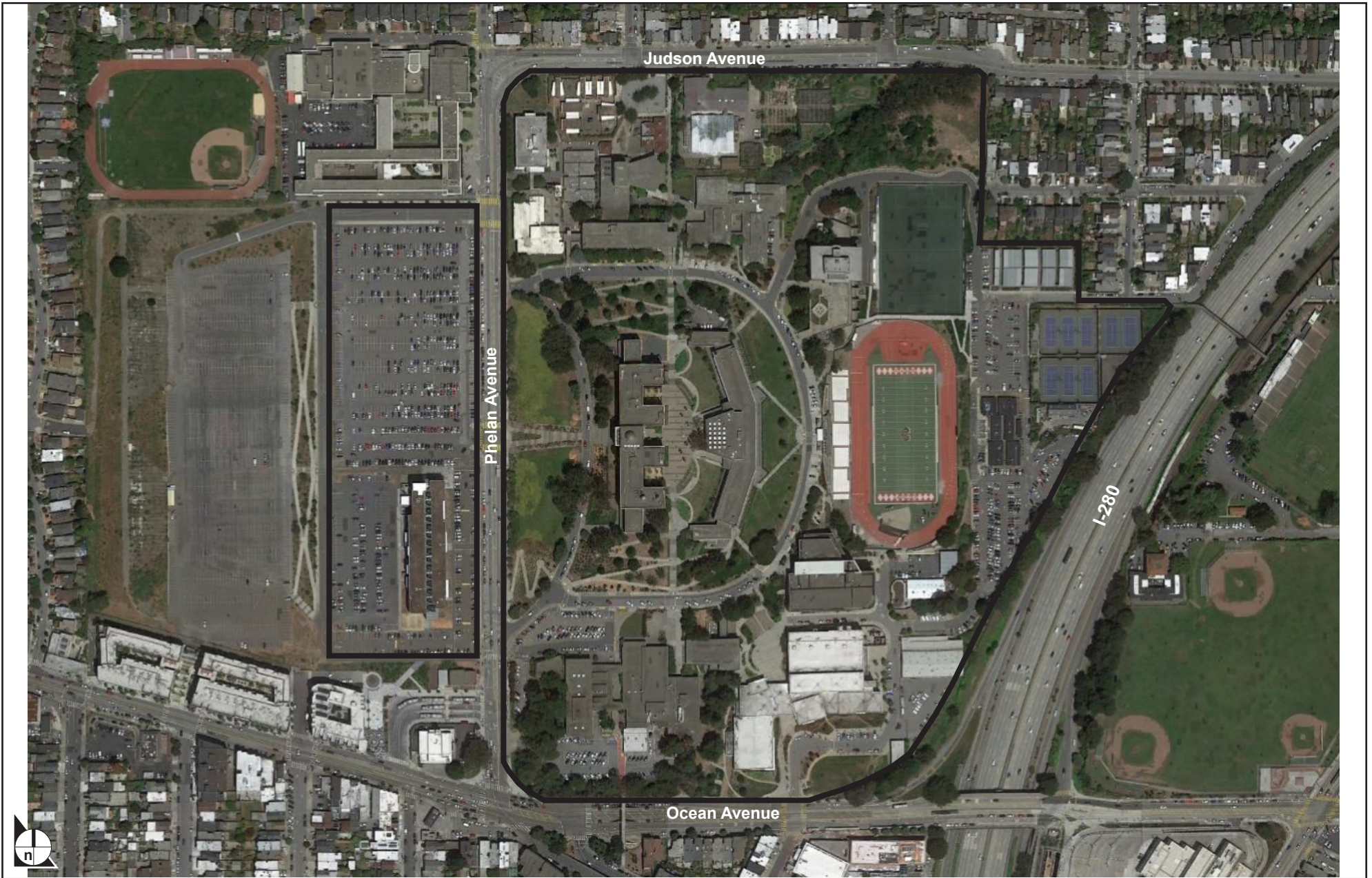
- The **Division of State Architect (DSA)** reviews community college project designs to determine compliance with the California Building Code (CBC);
- The **State Fire Marshal's Office** has delegated fire code regulatory responsibilities for community college facilities to DSA;
- The **Regional Water Quality Control Board** for Stormwater Pollution Prevention Plans required during construction;
- The **Bay Area Air Quality Management District** for any new stationary sources of air emissions; and
- The **City and County of San Francisco**, for wastewater and water connections, and fire hydrants/water pressure.



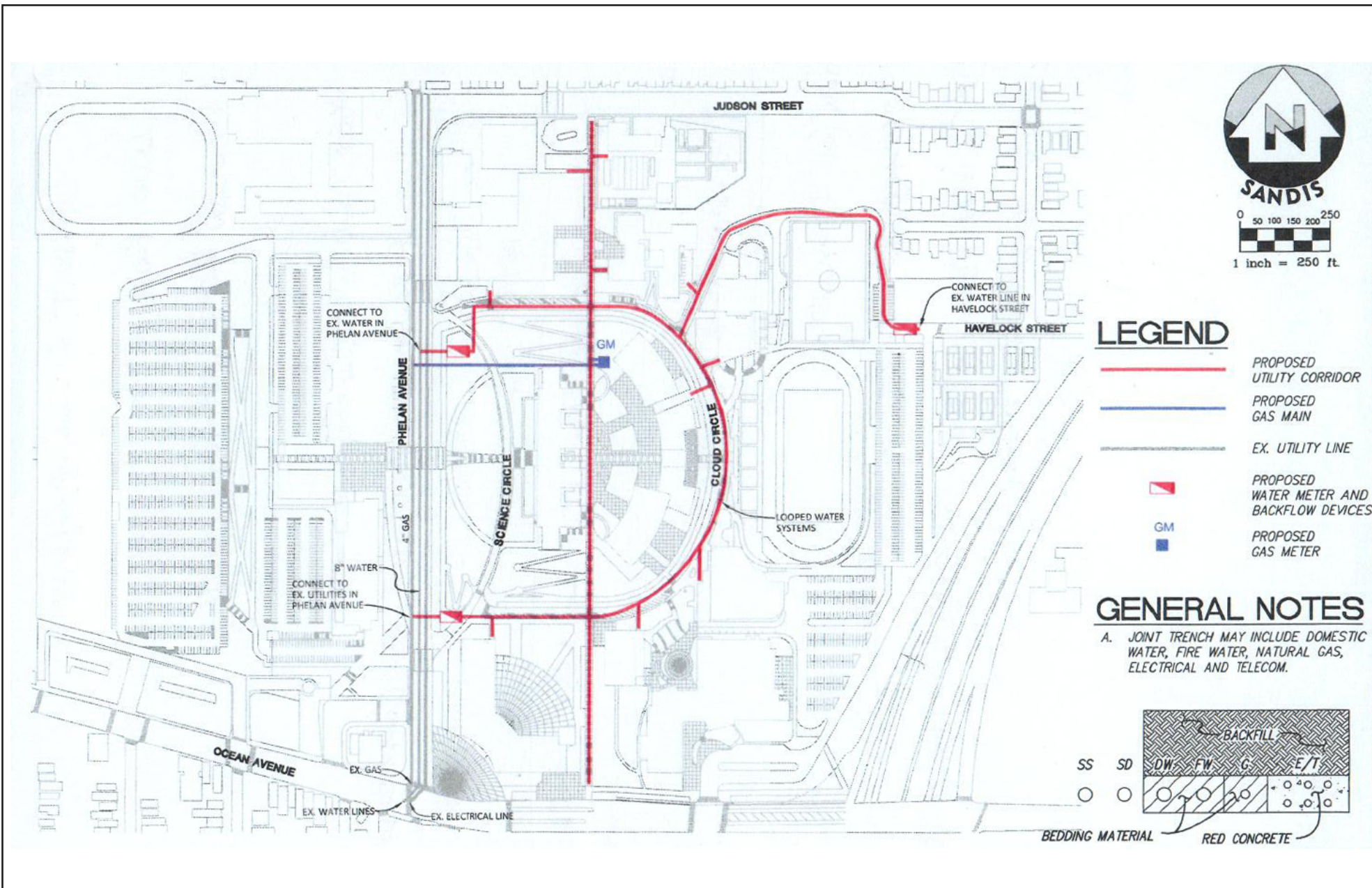
SOURCE: Google Maps, 2018

FIGURE 1

Regional Location



SOURCE: Google Earth, 2018



SOURCE: City College of San Francisco, 2018

FIGURE 3

Conceptual Utility Corridor

III. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would potentially be affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- | | |
|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources |
| <input checked="" type="checkbox"/> Air Quality | <input type="checkbox"/> Biological Resources |
| <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology and Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards and Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning |
| <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise |
| <input type="checkbox"/> Population and Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Circulation |
| <input checked="" type="checkbox"/> Tribal Cultural Resources | <input type="checkbox"/> Utilities/Service Systems |
| <input type="checkbox"/> Mandatory Findings of Significance | |

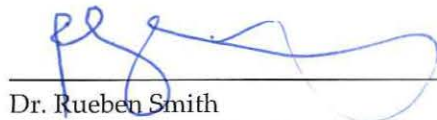
IV. DETERMINATION

On the basis of the initial evaluation that follows:

- ☐ I find that the proposed project **WOULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.

- ☒ I find that although the proposed project could have a significant effect on the environment, there would not be a significant effect in this case because revisions in the project have been made that would avoid or reduce any potential significant effects to a less than significant level. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

- ☐ I find that the proposed project **MAY** have a significant effect on the environment. An **ENVIRONMENTAL IMPACT REPORT** will be prepared.



Dr. Rueben Smith

Senior Vice Chancellor of Facilities, Capital Planning, and Public Safety

Date

3-11-19

V. EVALUATION OF ENVIRONMENTAL IMPACTS

During the completion of the environmental evaluation, the College relied on the following categories of impacts, noted as column headings in the IS checklist. All impact determinations are explained, and supported by the information sources cited.

- A) “Potentially Significant Impact” is appropriate if there is substantial evidence that the project’s effect may be significant. If there are one or more “Potentially Significant Impacts” for which effective mitigation may not be possible, a Project EIR will be prepared.
- B) “Less Than Significant With Mitigation Incorporated” applies where the incorporation of project-specific mitigation would reduce an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” All mitigation measures must be described, including a brief explanation of how the measures would reduce the effect to a less than significant level.
- C) “Less Than Significant Impact” applies where the project would not result in a significant effect (i.e., the project impact would be less than significant without the need to incorporate mitigation).
- D) “No Impact” applies where the project would not result in any impact in the category or the category does not apply. This may be because the impact category does not apply to the proposed project (for instance, the project site is not within a surface fault rupture hazard zone), or because of other project-specific factors.

Impact Questions and Responses

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
1. AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Topographic elevations across the main campus vary by about 125 feet, from the eastern edge of the campus to the prominent hilltop at Cloud Hall and the Science Building. The topography can be described as falling within three broad zones: (1) the hilltop (about 350 feet above mean sea level [msl]), (2) the mid-level (about 295 to 350 feet above msl), structured around Cloud Circle and accommodating the bulk of campus buildings and plazas, and (3) the lower levels (240 to 260 feet above msl) along the campus periphery. Steep slopes tend to separate these areas. The visibility of the Main Campus is somewhat limited due to a combination of intervening topography and developed uses, although unobstructed views of parts of the campus are available from publicly-accessible McLaren Park and Mount Davidson (CCSF 2004).

Discussion of Potential Project Impacts

a) **Less than Significant Impact.** A scenic vista is generally defined as an expansive view of highly valued landscape as observable from a publicly accessible vantage point. As discussed above, publically accessible views of the two project sites are available only intermittently from segments of nearby campus roadways due to topography and from McLaren Park and Mount Davidson. The proposed project would mainly involve the placement of utility corridors within the interior of the campus below or near the ground surface, and thus would not be visible from off site locations. The proposed CHW plant would be located within the interior of the campus between the Visual Arts Building and Batmale Hall, and thus views of the facility would be either by totally or partial obscured. For these reasons, the proposed project

would not substantially block or alter scenic vistas from public viewpoints in the area, and this impact is considered less than significant.

b) **No Impact.** The main campus is not located adjacent to a state scenic highway (Caltrans 2018) and does not contain scenic resources. As a result, the proposed project would have no impact with regard to this criterion.

c). **Less than Significant Impact.** Installation of the utility corridors would occur below or near the ground surface and the CHW plant would be located between the Visual Arts Building and Batmale Hall, and thus would not adversely affect the visual quality and character of the main campus. The campus is a mix of architectural styles without a dominating design or aesthetic. As such, the CHW plant would be compatible with the visual character of the area. For these reasons, the impact of the proposed project with regard to visual character would be less than significant.

d) **Less than Significant Impact.** The proposed upgrades to the lighting system on the main campus would shift some light and glare sources within the campus, and could increase light and glare in parts of the campus. Lighting associated with the CHW would consist of interior and security lighting. All lighting would be directed downward and thus is not expected to create substantial new illumination in the area. For these reasons, potential light and glare impact generated by the proposed project would be less than significant.

e) **Less than Significant Impact.** San Francisco Planning Code Section 295 requires that a proposed project not cast a shadow on open space under the jurisdiction of the San Francisco Recreation and Park Commission between one hour after sunrise and one hour before sunset, at any time of the year. There is no public open space under the jurisdiction of City's Recreation and Park Commission in the immediate vicinity of the main campus. The proposed utility corridors would be installed underground and thus would not cast shadow. The proposed CHW plant would be approximately 20 feet in height, and thus would cast shadow in the immediate vicinity of the plant. However, given the close proximity of the Visual Resources Building and Batmale Hall to the CHW plant, the plant would likely cast shadow on areas that are already shaded by these structures. For these reasons, the impact associated with shadow would be less than significant.

Discussion of Potential Cumulative Impacts

Anticipated future development in the Balboa Park Station area may block views of scenic vistas, substantially degrade the visual character of the area, or create a new source of substantial light or glare. Anticipated future development in the Balboa Park Station area would not substantially damage scenic resources within a state scenic highway, as no officially-designated state scenic highway is located in the area. As discussed above, the proposed project would not substantially block or alter scenic vistas from public viewpoints in the area nor would it substantially degrade the existing visual character. In addition, the proposed lighting system would not create substantial new illumination in the area. For these reasons, the proposed project would not result in a considerable contribution to cumulative impacts related to aesthetics, and this impact would be less than significant.

According to the *Balboa Park Station Area Plan EIR*, shadow cast by anticipated future development in the Balboa Park Station area would not substantially affect public open spaces under the jurisdiction of City's Recreation and Park Commission nor would it create new shadows on publicly accessible open space area outside of the plan area. As discussed above, the proposed project would not cast shadow on any

public open space under the jurisdiction of City's Recreation and Park Commission. As a result, the proposed project would not result in a considerable contribution to cumulative impacts related to shadow, and this impact would be less than significant.

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
2. AGRICULTURE AND FORESTRY RESOURCES – Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is currently developed with educational buildings, athletic facilities, and landscaping and is zoned P-Public.

Discussion of Potential Project Impacts

a) **No Impact.** The project site is not currently used for agriculture, and is not designated as Important Farmland on maps prepared pursuant to the Farmland Mapping and Monitoring Program. There would be no impact with regard to this criterion.

b-c) **No Impact.** The project site is designated for educational uses. No portion of the project site is zoned for agricultural use, forest land or timberland. In addition, there is no Williamson Act contract applicable to the project site or its vicinity. There would be no impact with regard to these criteria.

d) **No Impact.** The project site and surrounding area does not include any forest land or timberland. There would be no impact with regard to this criterion.

e) *No Impact.* No Important Farmland or other agricultural land is present in the project vicinity. Therefore, the project would not involve any changes that could indirectly cause conversion of Important Farmland to non-agricultural use. There would be no impact with regard to this criterion.

Discussion of Potential Cumulative Impacts

The Balboa Park Station area is urban in nature and is not designated as Important Farmland on maps prepared pursuant to the Farmland Mapping and Monitoring Program. As a result, anticipated future development in the Balboa Park Station area, including the proposed project, would not result in the loss of Important Farmland. In addition, land in the Balboa Park Station area is zoned for urban uses. Therefore, anticipated future development in the Balboa Park Station area would not displace land zoned for agricultural use or forest land or timberland, and would not conflict with land under a Williamson Act contract. As a result, the proposed project would not result in a considerable contribution to cumulative impacts related to agriculture and forest resources, and this impact would be less than significant.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
3. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation (e.g., induce mobile source carbon monoxide (CO) emissions that would cause a violation of the CO ambient air quality standard)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The project area is subject to air quality planning programs developed in response to both the Federal Clean Air Act (CAA) and the California Clean Air Act (CCAA). Marin County is in the San Francisco Bay Area Basin and is regulated by the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and the Bay Area Air Quality Management District (BAAQMD).

The main campus is located in the City and County of San Francisco, which is included in the San Francisco Bay Area Air Basin (SFBAAB or Air Basin). Air quality in the Air Basin is monitored by the BAAQMD and CARB. Based on pollutant concentrations measured at monitoring stations within the Air Basin, the SFBAAB is classified as being either in attainment or non-attainment of federal and state air quality standards. The Air Basin is designated nonattainment for the federal and state ozone 8-hour standard, the state ozone 1-hour standard, the state Particulate Matter 10 microns or less (PM10) standard, and the state and federal Particulate Matter 2.5 microns (PM2.5) standards. For all other pollutants, the Air Basin is in attainment or unclassified.

Some groups of people are considered more sensitive to adverse effects from air pollution than the general population. These groups are termed “sensitive receptors.” Sensitive receptors in the vicinity of the main campus include residences adjacent to the campus across Ocean Avenue, Judson Avenue, and Havelock Street. Residences are also located to the west and the other side of the South and North Balboa Reservoirs. In addition, Bishop Riordan High School is located adjacent to the northwestern portion of campus and Lick Wilmerding High School is located adjacent to the southeastern portion of the campus.

The *BAAQMD CEQA Air Quality Guidelines* (“BAAQMD Guidelines”) set forth methodologies and quantitative significance thresholds that a lead agency may use to estimate and evaluate the significance of a project’s air emissions. The BAAQMD Guidelines present thresholds for evaluating the significance of a project’s construction-phase and operational emissions, and include numeric thresholds for criteria pollutants and health-based evaluation criteria for toxic air contaminants (TAC). The BAAQMD Guidelines do not recommend quantification of fugitive dust emissions but note that the impact from a project’s fugitive dust emissions during construction would be significant unless dust control measures and other best management practices are implemented.

Discussion of Potential Project Impacts

a) ***Less than Significant Impact.*** The most recent clean air plan is the *Bay Area 2017 Clean Air Plan* that was adopted by the BAAQMD in April 2017. A project would be considered to conflict with or obstruct implementation of the regional air quality plans if it would be inconsistent with the emissions inventories contained in the regional air quality plans. Emission inventories are developed based on projected increases in population and vehicle miles traveled (VMT) within the region. The proposed project would not result in an increase in campus population or population in the City and County of San Francisco or a related increase in vehicle miles traveled within the region. Since air pollutants would be generated mainly by project grading, construction, and related vehicle trips to and from the site by construction workers and not by a permanent increase in the population of the area, the proposed project would have a less than significant impact.

b-c) ***Less than Significant Impact with Mitigation.*** Implementation of the proposed project would result in short-term emissions associated with ground disturbance and use of construction equipment and vehicles. Minimal operational emissions are anticipated after the construction activities are completed, for reasons presented below.

Construction

Implementation of the proposed project would result in short-term emissions associated with ground disturbance, use of construction equipment and vehicles, and truck trips to haul soil off-site. Construction-related emissions were estimated using the SCAQMD’s CalEEMod 2016.3.2 model using assumptions provided by Campus staff and estimating any outstanding data needs. The phased construction of the proposed project is anticipated to begin in January 2020 and last approximately 16 months.

The proposed project features two main components; (1) a 2,700 square foot CHW Plant is to be constructed just north of the intersection of Cloud Circle and Marston Avenue; and (2) the installation of new/upgraded utility lines, which requires trenching. This work is anticipated to occur over the majority of Cloud Circle, as well as Marston Avenue and bisecting the campus north-to-south from Judson Avenue to Ocean Avenue. It was assumed that grading for the CHW Plant would occur concurrently

with trenching for the utility lines. It is anticipated that trenching and grading would generate approximately 10,667 cubic yards of soil export. A significant amount of building construction for the CHW Plant is assumed to occur offsite to the metal fabrication tool and equipment needed to build the plant. Because of this, a significant portion of building construction emissions would likely occur offsite. **Table 1, Proposed Construction Schedule** summarizes the proposed construction schedule that was modeled for air quality impacts.

Table 1
Proposed Construction Schedule

Phase	Duration ^{/a/}
Demolition	1/1/2020 - 1/14/2020
Site Preparation	1/15/2020 - 1/21/2020
Grading	1/22/2020 - 3/17/2020
Trenching	1/22/2020 - 4/14/2020
Building Construction	3/25/2020 - 2/23/2021
Paving	2/24/2021 - 3/9/2021
Architectural Coating	3/10/2021 - 3/23/2021

S /a/ - All durations approximate.

Source: Impact Sciences, 2018

A conservative scenario was modeled that assumed that the proposed project would be constructed at one time and not in phases. Detailed assumptions associated with construction are included in **Appendix B**. The estimated construction emissions are provided below in **Table 2, Estimated Daily Construction Emissions**.

Table 2
Estimated Daily Construction Emissions (pounds/day)

	CO	NOx	ROG	PM10 (Fugitive Dust)	PM10 (Exhaust)	PM2.5 (Exhaust)
2020	10.9	12.9	1.4	0.3	0.7	0.6
2021	1.3	1.3	0.4	<0.1	0.1	0.1
<i>Maximum</i>	10.9	12.9	1.4	0.3	0.7	0.6
Significance Thresholds	None	54	54	None	82	54
Exceedance?	No	No	No	No	No	No

Source: Impact Sciences, Inc. 2019.

As shown in **Table 2**, the proposed projects individually and combined would not result in emissions that exceed any of the thresholds of significance for criteria pollutants. The impact from air pollutant emissions during the construction-phase of the proposed projects would be less than significant.

Fugitive Dust

As mentioned above, movement of construction equipment, especially on unpaved surfaces, during construction activities and off-haul of excavated materials (if needed) could temporarily generate fugitive dust, including PM10 and PM2.5 emissions. Unless properly controlled, vehicles leaving the sites would deposit mud on local roadways, which could be an additional source of airborne dust after it dries. Fugitive dust emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. Fugitive dust emissions would also depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction sites. The BAAQMD Guidelines consider the impact from a project's construction-phase dust emissions to be less than significant if best management practices listed in the guidelines are implemented. Without these BMPs, the impact from fugitive dust emissions would be potentially significant. Thus, to ensure that construction-phase emissions are controlled and minimized, **Mitigation Measure AIR-1** is included which requires that dust control and other BMPs put forth by the BAAQMD are implemented by each proposed project.

Mitigation Measure AIR-1: The construction contractor(s) shall implement the following BMPs during project construction:

- All exposed surfaces (e.g., parking areas, staging areas, soil stockpiles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- 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.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible and feasible.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five 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.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Operation

Operation of the proposal CHW Plant will add a new source of air emissions to the campus which would consist mainly of emissions from area and energy sources. Emissions associated with project operations are shown in **Table 3, Estimated Daily Operational Emissions**, below.

Table 3
Estimated Daily Operational Emissions (pounds/day)

	CO	NOx	ROG	PM10	PM2.5
Area	<0.1	<0.1	0.2	<0.1	<0.1
Energy	<0.1	0.1	<0.1	<0.1	<0.1
Mobile	0.1	<0.1	<0.1	<0.1	<0.1
<i>Total</i>	0.1	0.1	0.2	<0.1	<0.1
Significance Thresholds	None	54	54	82	54
Exceedance?	No	No	No	No	No

Source: Impact Sciences, Inc. 2018.

As shown in **Table 3**, emissions from operation of the proposed CHW Plant would not exceed BAAQMD significance thresholds for operational emissions. The impact from air pollutant emissions during operation would be less than significant.

d) **Less than Significant Impact.** Sensitive receptors are locations where an identifiable subset of the general population (children, asthmatics, the elderly, and the chronically ill) that is at greater risk than the general population to the effects of air pollutants is likely to be exposed. These locations include residences, schools, playgrounds, childcare centers, retirement homes, hospitals, and medical clinics. The potential for project construction activities and operation of the proposed CHW Plant to affect sensitive receptors is analyzed below.

Construction

Construction of the proposed project has the potential to result in emissions of toxic TAC emissions from the operation of diesel construction equipment. The BAAQMD CEQA Guidelines state that the zone of influence for TAC emissions is 1,000 feet from nearby sensitive receptors. The majority of construction activity will occur more than 1,000 feet from off-site sensitive receptors. Additionally, trenching activity is not anticipated to occur in one static location on site, as construction would be linear and move as segments are completed. As shown in **Table 2**, above, diesel exhaust emissions of PM10 and PM2.5, which represent the majority of TAC emissions during construction, are far below the BAAQMD thresholds of significance. Further, **Mitigation Measure AIR-1** would further reduce TAC emissions from diesel construction equipment by minimizing idling and ensuring equipment is in proper working order. This impact would be less than significant.

Operation

Operation of the proposed CHW Plant is not expected to result in significant emissions of TACs. There would be no new emissions from diesel generators or boilers, which are typical stationary sources of TACs. Additionally, the plant would be fully contained, and emissions from sources, such as chemicals used in the operation of the plant, are not anticipated to disperse outside of the plant area. As shown in **Table 3**, above, air quality emissions during operation of the proposed project would be minimal, and far below the BAAQMD thresholds of significance. Project operations are not anticipated to include any sources of TAC emissions. This impact would be less than significant.

e) *Less than Significant Impact.* The proposed project would generate localized emissions of diesel exhaust during construction equipment operation and truck activity. The odor from these emissions may be noticeable from time to time to adjacent receptors. However, they would be localized and are not likely to adversely affect people off site resulting in confirmed odor complaints. The project would not include any sources of significant odors that would cause complaints from surrounding uses. This impact would be less than significant.

Discussion of Potential Cumulative Impacts

According to the *Balboa Park Station Area Plan EIR*, anticipated future development in the area would not significantly degrade regional or local air quality except for PM₁₀, which would exceed the BAAQMD project-specific significance threshold for the pollutant. In addition, anticipated future development in the area would increase the number of residential receptors in proximity to existing toxic air contaminants (TAC), pollutant, and odor emission sources, which could increase the potential for future land use conflicts. As discussed above, the proposed project's construction exhaust emissions would not exceed the significance thresholds, and fugitive dust emissions would be adequately controlled through implementation of **Mitigation Measure AIR-1**. In addition, the proposed project's operational emissions would not exceed the significance thresholds. Concerning community human health risk, the project's construction activities and operation of the proposed CHW Plant would have a less-than-significant impact. Furthermore, air quality impacts are by nature cumulative impacts, with air quality management plans and significance thresholds designed to include all foreseeable potential future development in a region. Consequently, the air quality analysis presented above that compares the proposed project's emissions to the relevant thresholds is by nature a cumulative analysis. The construction and operation of the proposed project would not make a considerable contribution to a cumulative air quality impact that would result from future development in the City.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
4. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any applicable policies protecting biological resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is located in an urban area and is surrounded by existing residential and commercial uses. No suitable habitat for special-status plants or sensitive mammal, reptile, amphibian, or fish species exists on the main campus. The campus lacks any biological habitat with the exception of typical urban landscaping. According to the US Fish and Wildlife Service (USFWS) National Wetlands Inventory, there are no wetlands or potential wetlands located on or within the vicinity of the project site (USFWS 2018).

The nearest body of water to the project site is the San Francisco Bay, located more than three miles to the east of the campus.

Discussion of Potential Project Impacts

a) ***No Impact.*** As identified above, the main campus is located in a developed urban area and is entirely developed with structures, pathways, and other facilities. Landscaping on campus consists of trees and ornamental shrubs. As a result, no suitable habitat for special-status plants or sensitive mammal, reptile, amphibian, or fish species exists on the campus or in its vicinity that could be affected by the proposed project. There would be no impact with regard to this criterion.

b) ***No Impact.*** No riparian habitat or other sensitive natural community is present on the main campus or in the project vicinity. As such, the proposed project would not affect riparian habitat or other sensitive natural communities. There would be no impact with regard to this criterion.

c) ***No Impact.*** There are no wetlands on the main campus, as defined by the federal Clean Water Act or the California Fish and Game Code. There would be no impact with respect to this criterion.

d) ***No Impact.*** Given the project location in a developed urban area, it is unlikely that any wildlife movement would occur through the main campus. There would be no impact with respect to this criterion.

e) ***No Impact.*** As a state entity, CCSF is exempted by the state constitution from compliance with local land use regulations whenever using property under its control in furtherance of its educational purposes, including San Francisco General Plan policies for the protection of urban biological resources. However, because of the main campus' developed condition and its location in an urban area, construction of the proposed building at this location would not conflict with any existing policies. There would be no impact with regard to this criterion.

f) No adopted habitat conservation plan or natural community conservation plan applies to the main campus or its vicinity. There would be no impact with respect to this criterion.

Discussion of Potential Cumulative Impacts

Anticipated future development in the Balboa Park Station area does not have the potential to adversely affect biological resources in the area due to its urban nature. As discussed above, the proposed project would have no project-level impacts on biological resources. The impact of cumulative development on biological resources would be less than significant.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
5. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Several structures on main campus are eligible for listing on the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR) (CCSF 2004). The Northwest Information Center (NWIC) was contacted to conduct an archaeological records search for the project site and surrounding area. According to the NWIC, there is a low potential for unrecorded Native American resources on campus while there is a moderate to high potential for unrecorded historic-period archaeological resources on the campus (NWIC 2018). In addition, a search of the sacred lands file conducted by the Native American Heritage Commission (NAHC) did not indicate the presence of Native American resources in the immediate project area (NAHC 2018). A copy of this correspondence is provided in **Appendix D**.

Discussion of Potential Project Impacts

a) **Less than Significant.** Some of the structures on main campus are more than 45 years old and thus meet the age requirement of a historical resource. However, the installation of the utility corridors and construction of CHW plant would not result in the demolition or alteration of these structures. Impacts related to historical resources would be less than significant.

b, d) **Less than Significant Impact with Mitigation.** The NWIC indicated that there is low potential for unrecorded Native American resources on the main campus while there is a moderate to high potential for unrecorded historic-period archaeological resources on the campus. A search of the sacred lands file conducted by the Native American Heritage Commission (NAHC) did not indicate the presence of Native American resources in the immediate project area. As the proposed utility corridors would involve trenching, there is potential for encountering buried archaeological resources of the pre-historic and historic periods during construction of the proposed project. Any inadvertent damage to significant

pre-historic archaeological resources and historic-period archaeological resources during site grading and excavation (including excavation necessary for required off-site utility improvements along Maple Court and Main Street) represents a potentially significant impact. However, implementation of Mitigation Measure CUL-1 would reduce the impact to a less than significant level.

Mitigation Measure CUL-1: Should an archaeological artifact be discovered during project construction and excavation pursuant to *CEQA Guidelines* 15064.5 (f), “provisions for historical or unique archaeological resources accidentally discovered during construction” shall be instituted. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 100 feet of the resources shall be halted and CCSF shall consult with a qualified archaeologist or paleontologist to assess the significance of the find (per Public Resource Code Section 5024.1, Title 14 CCR, Section 4852 and/or Public Resource Code 21083.2 in the event of a unique archaeological find). If any find is determined to be significant and will be adversely affected by the project, representatives of CCSF and the qualified archaeologist and/or paleontologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation (per *CEQA Guidelines* 15064.5 (b) and Public Resource Code 21083.2). All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and documented by the qualified archaeologist according to current professional standards (per the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR44716)).

c) **Less than Significant Impact.** A records search has indicated that no paleontological finds have been made in the geologic units that underlie the main campus (within or near the project area) (CCSF 2004). There would be no impact with regard to this criterion.

Discussion of Potential Cumulative Impacts

Anticipated future development in the Balboa Park Station area has the potential to cause a substantial adverse change in the significance of a historical resource, such as a potential historic district along Ocean Avenue, and according to the *Balboa Park Station Area Plan EIR*, this impact is considered significant and unavoidable (San Francisco 2008). As discussed above, the proposed project would not demolish or alter potential historic resources on the main campus. In addition, improvements under the proposed project would occur within the interior of the campus and not along Ocean Avenue. For these reasons, the proposed project would not result in a considerable contribution to cumulative impacts to historic architectural resources, and this impact would be less than significant.

Anticipated future development in the Balboa Park Station area has the potential to cause a substantial adverse change in the significance of an archaeological resource. However, according to the *Balboa Park Station Area Plan EIR*, with the implementation of mitigation, potential impacts to archaeological resources would be reduced to a less than significant level (San Francisco 2008). As discussed above, with the implementation of **Mitigation Measure CUL-1**, the proposed project would have less than significant project-level impacts on cultural resources. Therefore, the proposed project's cumulative impact on cultural resources would be less than significant.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
6. GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) (California Building Code), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The seismically active San Andreas fault zone is located approximately 3.5 miles southwest of the main campus. Other major seismically active faults in the region include the San Gregorio, Hayward,

Calaveras, and Rodgers Creek faults. The northwest trending City College Fault, which is roughly parallel to the regional fault structure, crosses the center of the campus, but is not considered active. Due to the proximity of the campus to the San Andreas and other major active faults in the San Francisco Bay Area, there is a high potential for the campus to experience moderate to strong ground shaking during a major earthquake on one of these faults (CCSF 2004).

The main campus is underlain by four geologic units: the Franciscan Complex Melange, consisting of small to large fragments of hard rock; the Colma Formation, consisting primarily of sands; Colluvium, consisting of a veneer over bedrock; and Artificial Fill. The campus is not located in liquefaction hazard zones designated for the City and County of San Francisco. However, areas of the campus underlain by sandy uncemented Colma Formation sediments and, more likely, loose sandy fills are susceptible to liquefaction if groundwater is sufficiently shallow. In addition, areas of a campus underlain by loose sandy fill are considered most susceptible to compaction settlement (CCSF 2004).

There is no evidence of past or ongoing landslide activity on campus except near the Lath House. Evidence of a surficial landslide on a fill slope south of the structure was visible in a 1972 aerial (CCSF 2004).

Discussion of Potential Project Impacts

a)(i) ***Less than Significant Impact.*** The main campus is not located within an Alquist-Priolo Earthquake Fault Zone. Based on the lack of evidence for active faulting along the City College fault, the potential for surface rupture at the campus is judged to be low. For these reasons, the proposed project would not expose people or structures to adverse effects involving rupture of a known earthquake fault. This impact is considered less than significant.

a)(ii) ***Less than Significant Impact.*** Due to the seismically-active nature of the San Francisco Bay Area, the main campus will likely experience strong seismically-induced ground shaking at some point in the future. The proposed utility corridors and CHW plant would be designed and constructed in accordance with the CBC and adhere to all applicable standards regarding structural engineering and seismic safety. Therefore, the proposed project would not expose people or structures to adverse effects involving strong seismic ground shaking. This impact is considered less than significant.

a)(iii) ***Less than Significant Impact.*** Liquefaction is the temporary transformation of saturated and very low cohesion or cohesion-less soils into a viscous liquid as a result of ground shaking. Compaction settlement, or seismic densification, occurs when loose granular soils above the water table increase in density as a result of earthquake shaking. Portions of the main campus may be susceptible to liquefaction and/or compaction settlement. As discussed above, the proposed utility corridors and CHW plant would be designed and constructed in accordance with the CBC and adhere to all applicable standards regarding structural engineering and seismic safety. As a result, the proposed project would not expose people or structures to adverse effects involving seismic-related ground failure. This impact is considered less than significant.

a)(iv) ***No Impact.*** The main campus is not susceptible to seismically-induced landsliding except for an area south of the Lath House. The proposed utility corridors and CHW plant would not be located in this area, and thus the proposed project would not expose people or structures to adverse effects involving landslides. There would be no impact with respect to this criterion.

b) *Less than Significant Impact.* Construction of the proposed utility corridors and CHW plant would require grading and excavation, which would expose soil to erosion. CCSF would prepare an Erosion and Sediment Control Plan and construction personnel for the project would implement the plan. The plan would include measures to control on-site erosion and off-site sedimentation. In addition, each plan would include measures to keep construction pollutants from coming into contact with storm water. With this plan in place, impacts related to substantial soil erosion is expected to be less than significant.

c) *Less than Significant Impact.* Issues related to seismically induced and non-seismic landslide hazards are discussed in response to **Item 6(a)(iv)**, above. Issues related to liquefaction and related hazards are discussed in response to **Item 6(a)(iii)**, above. Issues related to soil properties are discussed in response to **Item 6(d)**, below. Installation of the utility corridors would require trenching, and these trenches could become unstable and subject to failure over the short term if they are improperly designed or implemented. As identified above, development would be designed and constructed in accordance with the current CBC, which includes provisions that specifically address trenching. Impacts related to unstable trenches are therefore expected to be less than significant.

d) *Less than Significant Impact.* Soils of the site may be expansive. As discussed above, the proposed project will adhere to the current CBC, which includes detailed provisions to ensure that the design of new facilities is appropriate to site soil conditions, including requirements to address expansive and otherwise problematic soils. With adherence to the CBC, impacts related to site soil conditions—including but not limited to expansive soils, if any are present—would be less than significant.

e) *No Impact.* The proposed project would not involve the installation of septic tanks or alternative wastewater disposal systems. There would be no impact with regard to this criterion.

Discussion of Potential Cumulative Impacts

Most of the geologic impacts such as those related to risk from faults, liquefaction potential, slope stability, landslide potential, expansive and compressible soils are site specific and do not combine. Therefore, the proposed project and other development in the vicinity would not result in a significant cumulative impact related to geologic risks. The one area where the impacts of concurrent construction projects have the potential to cumulate is related to soil erosion and discharge of sediment into receiving waters during construction. However, all storm water in San Francisco is discharged into the combined sewer system and treated before discharge into receiving waters. In addition, discharge of sediment and other pollutants into storm water during project construction would be controlled by an Erosion and Sediment Control Plan. The cumulative impact would be less than significant.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
7. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

General

Global climate change refers to any significant change in climate measurements, such as temperature, precipitation, or wind, lasting for an extended period (i.e., decades or longer). Climate change may result from:

- natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- natural processes within the climate system (e.g., changes in ocean circulation, reduction in sunlight from the addition of greenhouse gas (GHG) and other gases to the atmosphere from volcanic eruptions); and
- human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification).

The primary change in global climate has been a rise in the average global tropospheric temperature of 0.2 degree Celsius per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling using 2000 emission rates shows that further warming is likely to occur, which would induce further changes in the global climate system during the current century (IPCC 2007). Changes to the global climate system and ecosystems, and to California, could include declining sea ice and mountain snowpack levels, rising average global sea levels, and many other potentially severe problems (IPCC 2007).

The natural process through which heat is retained in the troposphere¹ is called the "greenhouse effect." The greenhouse effect traps heat in the troposphere through a threefold process as follows: (1) short-wave radiation in the form of visible light emitted by the Sun is absorbed by the Earth as heat; (2) long-wave

¹ The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers).

radiation is re-emitted by the Earth; and (3) GHGs in the upper atmosphere absorb or trap the long-wave radiation and re-emit it back towards the Earth and into space. This third process is the focus of current climate change actions.

While water vapor and carbon dioxide (CO₂) are the most abundant GHGs, other trace GHGs have a greater ability to absorb and re-radiate long-wave radiation. To gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-emit long-wave radiation over a specific period. The GWP of a gas is determined using carbon dioxide (CO₂) as the reference gas, which has a GWP of 1 over 100 years (IPCC 2014).² For example, a gas with a GWP of 10 is 10 times more potent than CO₂ over 100 years. The use of GWP allows GHG emissions to be reported using CO₂ as a baseline. The sum of each GHG multiplied by its associated GWP is referred to as “carbon dioxide equivalent” (CO₂e). This essentially means that 1 metric ton of a GHG with a GWP of 10 has the same climate change impacts as 10 metric tons of CO₂.

Regulatory Setting

In 2005, in recognition of California’s vulnerability to the effects of climate change, then-Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels (approximately 457 MMTCO₂e); by 2020, reduce emissions to 1990 levels (estimated at 427 MMTCO₂e); and by 2050 reduce statewide GHG emissions to 80 percent below 1990 levels (approximately 85 MMTCO₂e).

In response, the California legislature passed Assembly Bill No. 32 in 2006 (California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires CARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction from forecast emission levels) (OPR 2008).

Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, outlining measures to meet the 2020 GHG reduction limits. Assembly Bill 32 (AB 32) *Climate Change Scoping Plan* indicates how reductions in significant GHG sources will be achieved through regulations, market mechanisms, and other actions. The AB 32 Scoping Plan recommendations are intended to curb projected business-as-usual growth in GHG emissions and reduce those emissions to 1990 levels.

In 2015 and 2016, additional laws were enacted setting GHG reduction targets for the state of California for years beyond 2020. In April 2015, Governor Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. In October 2015, Senate Bill 350 (SB 350) was signed into law, establishing new clean energy, clean air and greenhouse gas reduction goals for 2030 and beyond. Building off of AB 32, SB 350 established California’s 2030 greenhouse gas reduction target of 40 percent below 1990 levels. In August 2016, Senate Bill 32 (SB 32) was signed into law which requires CARB to adopt rules and regulations to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030.

² All Global Warming Potentials are given as 100-year values.

On June 2, 2010, the Bay Area Air Quality Management District (BAAQMD) adopted updated CEQA Guidelines. These guidelines were last updated on May 9, 2017.³ These guidelines contain GHG operational emissions significance thresholds and recommended methodologies and models to be used for assessing the impacts of project-specific GHG emissions on global climate change. The updated BAAQMD *CEQA Air Quality Guidelines* state that thresholds of significance for GHG emissions should be related to AB 32's GHG reduction goals or the state's strategy to achieve the 2020 GHG emissions limit, and also include measures for reducing GHG emissions from land use development projects and stationary sources. The BAAQMD bright-line threshold of 1,100 MTCO₂e is designed for compliance with AB 32 and does not provide for the additional reductions in Bay Area GHG emissions needed to comply with SB 32. However, because a new threshold has not been put forth by the BAAQMD, that threshold is used in this Initial Study to evaluate the impacts of the two projects.

Discussion of Potential Project Impacts

a) ***Less than Significant Impact.*** Implementation of the proposed projects would result in small increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to the proposed project would be primarily associated with short-term, temporary increases of CO₂ from mobile sources including construction haul trucks (to off-haul excavated materials), and equipment used during the construction of the proposed project. There would be minimal operational GHG emissions for the reasons presented below.

Construction

During construction activities, GHGs would be emitted from the operation of construction equipment and from construction worker vehicles and haul truck trips to and from the campus. GHG emissions during construction were estimated using the CalEEMod model. Based on CalEEMod, construction activities on the project sites would generate a maximum of approximately 323 MTCO₂e per year in the year 2020. There are no quantitative thresholds put forth by the BAAQMD for the evaluation of the significance of a project's construction emissions. However, construction emissions are short term and not anticipated to be emitted for longer than the construction schedule detailed in **Table 1**. Furthermore, these estimated one-time emissions are lower than the 1,100 MTCO₂e threshold that is put forth by the BAAQMD for the evaluation of the impact from a project's operational emissions. Therefore, the emissions are considered too small to result in a significant impact on global climate. The impact from the construction-phase GHG emissions associated with the proposed project would be less than significant.

Operation

The only operational GHG emissions that would occur as a result of the proposed project are associated with the operation of the proposed CHW Plant. No operational emissions would be associated with the utility lines. These emissions were modeled using CalEEMod and are shown in **Table 4, Estimated Yearly Operational Emissions**, below.

³ BAAQMD, *CEQA Air Quality Guidelines*, May 2017. <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines>.

Table 4
Estimated Yearly Operational Emissions (MTCO₂e/year)

	MTCO ₂ e
Area	<1
Energy	23
Mobile	5
Waste	2
Water	2
Total Combined GHG Emissions	32
Significance Thresholds	1,100 MMTCO₂e
Exceedance?	No

Source: Impact Sciences, Inc. 2019.

GHG emissions associated with the proposed CHW Plant would not exceed the BAAQMD significance threshold. As a result, the proposed project would not significantly increase GHG emissions, and the impact would be less than significant.

b) ***Less than Significant Impact.*** The proposed project would result in a minimal increase in GHG emissions, as described above. Therefore, the proposed project would not conflict with AB 32 or other state laws and regulations related to GHG emissions and the impact would be less than significant.

Discussion of Potential Cumulative Impacts

As the impact of the project's GHG emissions is essentially a cumulative impact, the analysis presented above provides an adequate analysis of the cumulative impacts related to GHG emissions that are associated with the proposed project.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
8. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The California Department of Toxic Substances Control (DTSC) and the State Water Quality Regional Control Board (SWQRCB) maintain updated maps of hazardous materials sites. The main campus and surrounding area (zip code) are not included on either web database. Hazards materials on the campus are limited to those typically used in academic support and standard maintenance activities (e.g., laboratory chemicals, photo processing chemicals, solvents, paints, cleaning agents). Asbestos-containing building materials and lead-based paint may be present in older buildings.

There is one active underground storage tank (UST) on the main campus. In 1999, the College installed this 8,000-gallon, double-walled fiberglass UST, and an overfill protection and monitoring system, near the north end of Cloud Hall (CCSF 2004).

There are no known areas of soil or groundwater contamination on the main campus. However, there are several locations where contamination is suspected. In addition, a fill area is located in the southeastern portion of the campus under the maintenance shop. Landscaping wastes, organic debris, and debris from a horticulture building destroyed in a fire were used as fill material. A soil and groundwater analysis found trace amounts of pesticides in the soil at this location along with elevated concentrations of lead and total petroleum hydrocarbons quantified as gasoline (TPHg). Lead and TPHg was not detected in the groundwater. Methane was found in isolated pockets throughout the fill, ranging from trace levels to 100 percent of the lower explosive limit (CCSF 2004).

Discussion of Potential Project Impacts

a-b) **Less than Significant Impact.** There are no known environmental hazards on the main campus. Operation of the proposed utility corridors would not involve the routine use, storage, transport, and disposal of hazardous materials while the operation of the CHW plant would involve the routine use, storage, transport, and disposal of some hazardous materials, but not in any significant quantities. CCSF would follow all applicable regulations associated with the storage and use of the hazardous materials associated with CHW Plant. Small quantities of hazardous materials would potentially be used on campus during construction activities. As all construction activities would comply with state and federal hazard and hazardous material regulations, the risk associated with the routine handling, transport, use, and disposal of hazardous materials during construction would be minimal, and this impact is less than significant.

c) **Less than Significant Impact.** Archbishop Riordan and Lick Wilmerding high schools are the nearest schools to the main campus, located approximately 750 feet and 1,800 feet, respectively, from the CHW plant. Upkeep of the plant would involve typical hazardous materials for maintenance, which would be

stored in accordance to existing safety regulations. Local enforcement of hazardous materials usage and storage is administered by the San Francisco Department of Public Health (SFDPH) Hazardous Materials Unified Program Agency (CCSF 2004). The plant would be located less than 0.25 mile from Archbishop Riordan High School. As CCSF would follow all applicable regulations associated with the storage and use of the hazardous materials, it would not pose a threat to the high school. The plant would be located more than 0.25 mile from Lick Wilmerding High School and thus does not have the potential to affect the elementary school. For these reasons, this impact is considered less than significant.

d) **No Impact.** Based on CERCLIS, Geotracker, and EnviroStor database searches for known hazardous materials contamination, the main campus is not located on a property associated with a hazardous site listed under Government Code Section 65962.5, also known as the Cortese List (DTSC 2018). As a result, the proposed utility corridors and CHW plant would not create a significant hazard to the public or the environment associated with a hazardous site listed under Government Code Section 65962.5. There would be no impact with regard to this criterion.

e-f) **No Impact.** The main campus is not located within 2 miles of an airport or private airstrip. The nearest airport is the San Francisco International Airport, approximately 8 miles south of the campus. As such, there would be no impact with regard to these criteria.

g) **No Impact.** CCSF has developed emergency response plans, including an Emergency Operations Plan as well as other emergency or hazard response plans. Construction of the proposed utility corridors and CHW Plant would occur within the boundaries of the main campus, and street closures during project construction are not anticipated. Therefore, the proposed project would not impede any emergency routes and there would be no impact with regard to this criterion.

h) **No Impact.** The project site is located in an extensively urbanized area at a considerable distance from the closest wildland areas. There would be no impact with regard to this criterion.

Discussion of Potential Cumulative Impacts

Anticipated future development in the Balboa Park Station area has the potential to expose the public and the environment to risks associated with hazards from on-site contamination and routine use of hazardous materials. However, future development would be subject to oversight and regulation by federal, state, and local agency rules, regulations, and policies. As discussed above, the proposed project would also be required to adhere to federal, state, and local agency rules, regulations. This cumulative impact would be less than significant.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
9. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundate by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The main campus is located within the Islais Creek watershed, which flows west to east into San Francisco Bay. All storm water runoff generated on campus is presently directed toward the City's combined sewer system. The campus is also underlain by the Islais Valley Groundwater Basin. According to the Balboa Park Station Area Plan EIR there are no areas prone to surface flooding in San Francisco (San Francisco 2008).

Discussion of Potential Project Impacts

a, f) **Less than Significant Impact.** During construction of the utility corridors and proposed project, there is limited potential for erosion, sedimentation, and discharge of polluted runoff from the project site as the proposed project would not involve substantial grading or earth-moving activities. Furthermore, as identified in response to Geology and Soils **Item 6(b)**, an Erosion and Sediment Control Plan would be prepared and implemented for the project, which would include measures to control on-site erosion and off-site sedimentation. As a result, development of the proposed project would not result in storm water discharges that would violate water quality standards or waste discharge requirements during construction, and this impact would be less than significant.

The utility corridors would be constructed under existing road and pathways on the main campus while the CHW plant would be constructed within a parking lot next to the Visual Arts Center. For these reasons, construction of the proposed project would add little to any new impervious surface to the campus. During operation, all campus runoff would be routed to the City's combined sewer system, and would be treated prior to discharge to standards contained in the City's NPDES Permit for the Southeast Water Pollution Control Plant. The water quality impacts during operation would also be less than significant.

b) **Less than Significant Impact.** Only the proposed CHW plant would demand water, and groundwater would not be used as a source of supply. Natural recharge in the basin occurs principally as infiltration from streambeds that flow from the upland areas within the drainage basin and from direct percolation of precipitation that falls on the basin floor (DWR 2004). As the proposed utility corridors and CHW plant would add little to any new impervious surface to the main campus, there would not be a substantial reduction in the amount of land available for groundwater recharge. The impact would be less than significant.

c) **Less than Significant Impact.** Topographic elevations across the main campus vary by about 125 feet, from the eastern edge of the campus to the prominent hilltop at Cloud Hall and the Science Building. The proposed project would not materially change the topography of the site. As a result, the proposed

project would not substantially alter existing natural drainage patterns and would not result in significant erosion or siltation on or off site. Islais Creek is located over three miles to the northeast of the campus. Given the distance between this water body and the campus, the proposed project would have no effect on these resources. There would be no impact with respect to this criterion.

d) **No Impact.** As discussed in the previous response, the proposed project would not materially change the topography of the site. During project operation, all site runoff would be directed to the City's combined sewer system, which is designed to accommodate existing and future flows from the main campus and the surrounding area. Development of the proposed project would not substantially increase the amount of impervious surfaces on the campus, and therefore would not increase the rate or amount of runoff. As a result, the proposed project would not increase off-site delivery of runoff in a manner that would result in on- or off-site flooding. There would be no impact with regard to this criterion.

e) **Less than Significant Impact.** As discussed in response to **Items 9(c-d)**, above, little to no new impervious surface would be added to the main campus, and thus would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. See response to **Item 9(a)**, above, with regard to water quality. The proposed project would not provide substantial additional sources of polluted runoff. Therefore, this impact is considered less than significant.

g-h) **No Impact.** The proposed project does not include the construction of any housing and as a result, there would be no impact related to placement of housing in a flood hazard area.

i) **No Impact.** The project site is not located in an area subject to flooding from sea level rise or from the failure of a levee or a dam. There would be no impact with regard to this criterion.

j) **No Impact.** Tsunamis are seismic waves that are generated in the open ocean while seiches are seismic waves that are generated in an enclosed body of water, such as a lake or bay. Given its inland location, the main campus is not located in an area subject to a tsunami. In addition, as the campus is not located near a water body, it is not located in an area that could be subject to a seiche. Finally, the General Plan did not determine mudflows would be a hazard at this site. There would be no impact with regard to this criterion.

Discussion of Potential Cumulative Impacts

According to the *Balboa Station Area Plan EIR*, compliance with the Combined Sewer Overflow Control Policy and the Water Pollution Prevention Program, incorporation of unpaved open space into the project area, and application of the new development and redevelopment guidelines for new development proposals in the project area would reduce the impacts of stormwater flows on combined sewer overflow discharges by increasing infiltration of rainwater, delaying peak stormwater runoff flows, and providing reduction of pollutants in the stormwater runoff. This is considered a beneficial impact (San Francisco 2008). As discussed above, implementation of the proposed project would add little to any new impervious surface to the main campus. As a result, there would not be a substantial reduction in the amount of land available for groundwater recharge nor would there be an increase the rate or amount of runoff. In addition, implementation of the proposed project would not result in storm water discharges that would violate water quality standards or waste discharge requirements during construction or operation. For these reasons, the proposed project would not result in a considerable contribution to cumulative impacts related to hydrology and water quality, and this impact would be less than significant.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
10. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The main campus has been an educational facility since the 1940s. Existing buildings are distributed throughout the campus and provide approximately 1.4 million square feet of space. The northern and central areas of the campus are dominated by academic uses. The east side of the campus has mostly athletic and recreation uses, including the stadium (football/track) and the tennis courts. The southwest area, including the bookstore west of Frida Kahlo Way, is dominated by student services and administration uses. The southern portion of the south reservoir includes the Multi-Use Building while the northern portion of the south reservoir is used for campus parking. The north reservoir is solely devoted to campus parking although the City is planning a mixed-use residential and commercial development on the site.

The main campus and Balboa reservoir are in the P (Public Use) zoning district. The P district applies to “land that is owned by a governmental agency and in some form of public use, including open space,” and allows “[p]ublic structures and uses of the City and County of San Francisco, and of other governmental agencies...” The San Francisco Community College District is constitutionally exempt from local land use regulations whenever using property under its control in furtherance of its educational purposes. However, the use of the campus as a community college is consistent with the City’s zoning designation.

Discussion of Potential Project Impacts

a) **No Impact.** The main campus is located in a highly developed urban area. The proposed project would be constructed within the interior of the campus and would not involve the vacation of any public streets or pedestrian access ways. As a result, development of the proposed project would not physically divide an established community. There would be no impact with regard to this criterion.

b) **No Impact.** As stated above, the main campus is zoned P (Public Use) by the City and County of San Francisco. The proposed project would further CCSF’s educational mission and would not involve a land use change. There would be no impact with regard to this criterion.

c) **No Impact.** The main campus is not located within a habitat conservation plan or natural community conservation plan. There would be no impact with regard to this criterion.

Discussion of Potential Cumulative Impacts

Anticipated future development in the Balboa Park Station area would be reviewed for consistency with adopted land use plans and policies by the City. For this reason, pending and approved projects are anticipated to be consistent with the General Plan and zoning requirements, or be subject to an allowable exception, and further, would be subject to review under CEQA, mitigation requirements, and design review. As land uses on the main campus are consistent with the P (Public Use) zoning designation for the campus and the proposed project would not alter land uses on the campus, the cumulative impact of the proposed project and future development would be less than significant.

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
11. MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Relevant Elements of the Project and its Setting

All land in San Francisco, including the main campus, is designated by the California Division of Mines and Geology as Mineral Resource Zone 4 under the Surface Mining and Reclamation Act of 1975 (San Francisco 2008). This designation indicates that adequate information does not exist to assign the area to any other mineral resource zone; thus, the area is not one designated to have significant mineral deposits.

Discussion of Potential Project Impacts

a–b) **No Impact.** No known or potential mineral resources have been identified on the main campus. In addition, existing zoning and land uses preclude the use of the campus for mineral extraction (for example, sand and gravel extraction). Therefore, construction of the proposed utility corridors and CHW plant would not impede extraction or result in the loss of availability of a known mineral resource. There would be no impacts with regard to these criteria.

Discussion of Potential Cumulative Impacts

Minerals are not found to any extent in the Balboa Park Station area. As a result, anticipated future development in the Balboa Park Station area, including the proposed project, would not result in the loss of availability of a known resource. No cumulative impact would result.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
12. NOISE – Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (including construction)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Noise Fundamentals

Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). The human ear does not respond uniformly to sounds at all frequencies; for example, it is less sensitive to low and high frequencies than it is to the medium frequencies that more closely correspond to human speech. In response to the sensitivity of the human ear to different frequencies, the A-weighted noise level (or scale), which corresponds more closely with people's subjective judgment of sound levels, has been developed. This A-weighted sound level, referenced in units of dB(A), is measured on a logarithmic scale such that a doubling of sound energy results in a 3.0 dB(A) increase in noise level. In general, changes in noise levels of less than 3.0 dB(A) are not typically noticed by the human ear. Changes in noise levels ranging from

3.0 to 5.0 dB(A) may be noticed by some individuals who are extremely sensitive to changes in noise. A greater than 5.0 dB(A) increase is readily noticeable, while the human ear perceives a 10.0 dB(A) increase in sound level to be a doubling of sound.

When assessing community reaction to noise, there is an obvious need for a scale that averages varying noise exposures over time and that quantifies the result in terms of a single number descriptor. Several scales have been developed that address community noise level. Those that are applicable to this analysis are the Equivalent Noise Level (Leq), the Day-Night Noise Level (Ldn or DNL), and the Community Noise Equivalent Level (CNEL).

- Leq is the average A-weighted sound level measured over a given time interval. Leq can be measured over any period, but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods.
- Ldn or DNL is a 24-hour Leq with a “penalty” of 10 dB added during the nighttime hours (10:00 PM to 7:00 AM), which is normally sleeping time.
- CNEL is another average A-weighted sound level measured over a 24-hour period. However, the CNEL noise scale is adjusted to account for the increased sensitivity of some individuals to noise levels during the evening as well as the nighttime hours. A CNEL noise measurement is obtained after adding a “penalty” of 5 dB to sound levels occurring during the evening from 7:00 PM to 10:00 PM, and 10 dB to sound levels occurring during the nighttime from 10:00 PM to 7:00 AM.

Fundamentals of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate the potential for construction generated vibration to result in building damage and human complaints. **Table 5, Human Reaction and Effect of Buildings from Continuous or Frequent Intermittent Vibration Levels**, displays the reactions of people and the effects on buildings that continuous or frequent intermittent vibration levels produce.

The annoyance levels shown in **Table 5** should be interpreted with care since vibration may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual damage to the structure.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction-related groundborne vibration levels. Because of the impulsive nature of such activities, the PPV descriptor has been routinely used to measure and assess groundborne vibration and almost exclusively to assess the potential of vibration to induce architectural damage and the degree of annoyance for humans.

Table 5
Human Reaction and Effect of Buildings from
Continuous or Frequent Intermittent Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Virtually no risk of damage to normal buildings
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential dwellings such as plastered walls or ceilings
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to newer residential structures

Source: Illingworth & Rodkin, 2016c

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 in/sec PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Damage to buildings can be classified as cosmetic only, such as minor cracking of building elements, or may threaten the integrity of the building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

Noise Sensitive Land Uses

Sensitive receptors in the vicinity of the main campus include residences adjacent to the campus across Ocean Avenue, Judson Avenue, and Havelock Street. Residences are also located to the west on the other side of the Balboa Reservoir. In addition, Bishop Riordan High School is located adjacent to the northwestern portion of campus and Lick Wilmerding High School is located adjacent to the southeastern portion of the campus.

Existing Noise Environment

The existing ambient noise environment in the project vicinity is typical of many areas in San Francisco, dominated by vehicular traffic including cars, trucks, and MUNI buses. Short-term noise levels on main campus range from 51.3 to 59.6 dBA while calculated noise levels along roadways adjacent to the campus

range from 62.6 to 68.6 dBA. With respect to off-campus noise, short-term noise levels in the vicinity of the campus range from 55.7 to 70.5 dBA while calculated noise levels along area roadways range from 58.2 to 68.6 dBA (CCSF 2004).

Applicable Noise Standards

California Department of Health Services Guidelines

The California Department of Health Services has developed guidelines (1987) for community noise acceptability with which given uses are compatible for planning use by local agencies. According to these guidelines, exterior noise levels up to 70 dB(A) CNEL are “normally acceptable” for school uses.

City and County of San Francisco

The Environmental Protection Element of the San Francisco General Plan contains Land Use Compatibility Guidelines for Community Noise for determining the compatibility of various land uses with different noise levels. These guidelines, which are similar to the guidelines developed by the California Department of Health Services, state that the maximum satisfactory noise level is 60 dBA Ldn for residential and hotel uses.

Construction noise is regulated by the City’s Noise Ordinance. The ordinance requires that noise levels from individual pieces of construction equipment, other than impact tools, not exceed 80 dBA at a distance of 100 feet from the source.

Discussion of Potential Project Impacts

a) ***Less than Significant Impact.*** No operational noise is associated with proposed utility corridors. However, operational noise would be generated by the proposed CHW plant. The chillers in the plant would generate noise levels of 83 dBA at 50 feet while the cooling towers for the plant would generate a noise level of 70 dBA at 50 feet. The Visual Arts building and Batmale Hall are located less than 50 feet from the CHW plant and thus would experience noise levels up to 83 dBA at 50 feet or higher. Shielding installed around all new equipment at the main campus as a standard practice would reduce these noise levels by at least 15 dB(A). Therefore, with shielding, noise from CHW plant would not produce noise levels over 70 dB(A) CNEL, and the Visual Arts building and Batmale Hall would not be subject to exterior noise levels exceeding the state standard of 70 dB(A) CNEL for schools. This impact is less than significant.

b) ***Less than Significant Impact.*** Construction of the proposed utility corridors would involve trenching while construction of the proposed CHW plant would involve site preparation, foundation work, and the erection of structures. These activities may generate perceptible vibration when heavy equipment or impact tools (e.g., jackhammers, hoe rams) are used.

For construction-generated vibration to result in damage to buildings, the California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, which typically consist of buildings constructed since the 1990s. A conservative vibration limit of 0.3 in/sec PPV has been used for buildings that are found to be structurally sound but where damage to the structure is a major concern. For the purposes of this

analysis, therefore, it was assumed that groundborne vibration levels exceeding the conservative 0.3 in/sec PPV limit would have the potential to result in cosmetic damage to standard buildings.

Project construction activities, such as the use of jackhammers and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.) may generate substantial vibration in the immediate vicinity. Vibration levels would vary depending on soil conditions, construction methods, and equipment used. **Table 6, Vibration Levels for Construction Equipment**, presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet.

Table 6
Vibration Levels for Construction Equipment

Equipment		PPV at 25 ft. (in/sec)	Approximate L_v at 25 ft. (VdB)
Pile Driver (Impact)	upper range	1.518	112
	Typical	0.644	104
Pile Driver (Sonic)	upper range	0.734	105
	Typical	0.170	93
Clam shovel drop		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Federal Transit Administration. May 2006. *Transit Noise and Vibration Impact Assessment*. Table 12-2.

Notes: L_v = Velocity Level

The classroom buildings on main campus would be located within 25 feet of the proposed utility corridors. In addition, the proposed CHW plant would be located within 50 feet of the Visual Arts Building to the west. As the proposed project would not require pile driving, vibration levels would range from 0.003 to 0.210 in/sec PPV or higher given that work would take place within 25 feet of the buildings. However, the vibration level is not expected to exceed the conservative 0.3 in/sec PPV limit. Therefore, implementation of the proposed project would not expose persons to or generate excessive groundborne vibration or groundborne noise levels, and this impact would be less than significant.

c) **Less than Significant Impact.** The proposed project would not result in a permanent increase in noise due to traffic as the proposed utility corridors and CHW plant would serve the needs of the existing main campus and thus no new vehicle trips would be generated. As discussed above, chillers in the proposed CHW plant would generate noise levels of 83 dBA at 50 feet while the cooling towers for the plant would

generate levels of 67 to 73 dBA at 50 feet. With shielding, noise levels generated by stationary equipment would be reduced by about 15 dB(A), thus resulting in an average of 52 to 68 CNEL at 50 feet. The nearest residential structures to the proposed plant located approximately 500 feet to the north across Judson Street. At these distances, noise from plant's equipment would not exceed the City's 60 dB(A) Ldn exterior noise standard for residential uses as noise levels diminish rapidly at a rate of approximately 6 dBA per doubling of distance. In addition, existing structures and topography would also shield these residential structures thus further reducing noise levels. For these reasons, implementation of the proposed project would not result in a substantial permanent increase in ambient noise levels on or off the main campus above levels existing without the project, and this impact is less than significant.

d) **Less than Significant Impact with Mitigation.** Construction of the proposed utility corridors would involve trenching while construction of the proposed CHW plant would involve site preparation, foundation work, and the erection of structures. In addition, construction truck movement would be expected to temporarily elevate the noise levels along roadways used for access to the construction sites. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance and shielding between construction noise sources and noise sensitive areas. Individual types of construction equipment typically generate noise levels ranging from 74 to 89 dB(A) at a distance of 50 feet. However, these noise levels would diminish rapidly at a rate of approximately 6 dBA per doubling of distance.

On-site noise-sensitive uses include academic buildings that would be located close to areas where construction would occur. As discussed above, these uses could temporarily be exposed to a maximum noise level of 89 dBA at 50 feet, which is greater than the state's exterior noise level standard of 70 dB(A) CNEL for schools. Off-site noise-sensitive uses along Judson Avenue would also be located within 100 feet of the construction of the utility corridor on the northern edge of main campus, and thus could temporarily be exposed to a maximum noise level of 83 dBA at 100 feet, which is greater than the standard of 80 dBA at 100 feet listed in the City's noise ordinance. Therefore, implementation of the proposed project could expose existing sensitive uses on the campus to elevated noise levels, and this represents a potentially significant impact. However, with the implementation of **Mitigation Measures NOI-1** through **NOI-3**, and the fact that noise generated by construction activities would be temporary, the impact from a temporary increase in ambient noise levels on and off campus during construction would be less than significant.

Mitigation Measure NOI-1: To the extent feasible, CCSF shall limit construction activity to the hours of 7:00 AM to 6:00 PM on weekdays, and 7:00AM to 5:00 PM on Saturdays and Sundays. If nighttime construction is required, CCSF shall apply for, and abide by the terms of, a permit from the San Francisco Department of Public Works. CCSF shall require contractors to comply with the City Noise Ordinance.

Mitigation Measure NOI-2: Construction contractors shall implement the following measures to further minimize construction noise impacts on sensitive receptors. This specification shall be included on all construction documents:

- Construction equipment shall be properly maintained in accordance with manufacturers' specifications and shall be fitted with the best available noise suppression devices (e.g., mufflers, silencers, wraps). All impact tools shall be shrouded or shielded, and all intake and exhaust ports on power equipment shall be muffled or shielded.

- Construction equipment shall not idle for extended periods of time near noise-sensitive receptors.
- Stationary equipment (compressors, generators, and cement mixers) shall be located as far from sensitive receptors as feasible. Sound enclosures shall be used during noisy operations on-site.

Mitigation Measure NOI-3: In the event that construction activities would occur for an extended period of time adjacent to classrooms, or that construction noise could not be attenuated to an acceptable level inside classrooms, CCSF shall temporarily relocate classes to a different location on campus.

e-f) **No Impact.** The main campus is not located within 2 miles of a public or private airport. The nearest airport is San Francisco International Airport, approximately 8 miles south of the campus. As such, there would be no impact with regard to these criteria.

Discussion of Potential Cumulative Impacts

Traffic generated by anticipated future development in the Balboa Park Station area is not expected to result in perceptible noise level changes also area roadways. However, anticipated future development in the area could exposes new residential uses to noise levels that exceed the City's noise standard of 60 dBA Ldn for residential uses. However, according to the *Balboa Park Station Area Plan EIR*, with the implementation of mitigation and compliance with Title 24 requirements, this impact would be reduced to a less than significant level. Finally, anticipated future development in the area could exposes new residential uses to vibration generated by existing rapid transit train (such as BART trains) and light rail train (such as Muni trains) operations. However, according to the *Balboa Park Station Area Plan EIR*, with the implementation of mitigation, this impact would be reduced to a less than significant level (San Francisco 2008). As discussed above the proposed project would not generate traffic-related noise and does not include the addition of sensitive receptors to the main campus. Finally, the proposed project would not result in a permanent increase in vibration. For these reasons, the proposed project would not result in a considerable contribution to cumulative noise during operation, and this impact would be less than significant.

Anticipated future development in the Balboa Park Station area could result in short-term construction-generated noise. Construction activities in the vicinity of the project site would occur on a temporary and intermittent basis, similar to the project, and would be required to comply with the City's Noise Ordinance. As discussed above, with mitigation, construction of the proposed project would not substantially increase ambient noise levels on the main campus or in the area. Therefore, the proposed project would not result in a considerable contribution to cumulative noise during construction, and this impact would be less than significant.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
13. POPULATION AND HOUSING – Would the Project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Residential uses are adjacent to the main campus across Ocean Avenue, Judson Avenue, and Havelock Street. The South and North Balboa Reservoirs separate the campus from residential uses to the west. Balboa Park is immediately east of I-280. There are commercial uses along Ocean Avenue west of Frida Kahlo Way, and two private high schools (Lick Wilmerding and Bishop Riordan) are immediately adjacent to the campus. The Ocean Avenue (Main) Campus is a community college and does not include any housing.

Discussion of Potential Project Impacts

a) **No Impact.** The proposed utility corridors and CHW plant would serve the needs of the existing main campus. As a result, no new students would be drawn to the campus. Furthermore, there are no housing units or businesses incorporated as part of the proposed project. As a result, the proposed project would not induce substantial population or employment growth in the area, either directly or indirectly. There would be no impact with regard to this criterion.

b-c) **No Impact.** There are no residences or people currently living on the main campus. As a result, the proposed utility corridors and CHW plant would not displace any housing or people. There would be no impact with regard to these criteria.

Discussion of Potential Cumulative Impacts

Anticipated future development in the Balboa Park Station area would result in substantial population growth. However, according to the *Balboa Park Station Area Plan EIR*, population growth is not expected to result in adverse physical impacts, because portions of the area are under-developed and have the potential to absorb substantially more household population growth than anticipated in the City's baseline population growth projections. In addition, increased employment in the area would not create a

substantial demand for additional housing or necessitate new residential development beyond what is anticipated to be provided in the area (San Francisco 2008). As discussed above, the proposed project would not induce substantial population growth in the area. As a result, the proposed project would not result in a considerable contribution to cumulative population growth, and this impact would be less than significant.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
14 PUBLIC SERVICES –				
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Fire protection and emergency medical services to the main campus are provided by the San Francisco Fire Department (SFFD) while Police services are provided by the San Francisco Community College District Police Department. Archbishop Riordan and Lick Wilmerding high schools are the nearest schools to the campus, and are located adjacent to the campus across Frida Kahlo Way and Ocean Avenue, respectively. The nearest park is Balboa Park, located immediately east of I-280.

Discussion of Potential Project Impacts

a) **No Impact.** The proposed utility corridors and CHW plant would serve the needs of the existing main campus. As a result, no new students would be drawn to the campus, and thus there would be no increase in calls for service. Furthermore, the proposed utility corridors and CHW plant would be built according to the Fire Code and National Fire Protection Agency requirements and would be inspected by the DSA for conformance. There would be no impact with regard to this criterion.

b-e) **No Impact.** The proposed utility corridors and CHW plant would serve the needs of the existing main campus. As a result, no new students would be drawn to the campus, and thus there would be no increase in calls for service. Therefore, construction and operation of the proposed project would not affect San Francisco Community College District Police Department services or response times. Furthermore, construction and operation of the proposed project would not increase the need for school or park facilities, or other facilities such as public libraries. There would be no impact with regard to these criteria.

Discussion of Potential Cumulative Impacts

Anticipated future development in the Balboa Park Station area could increase the demands on public services in the area, thus resulting in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts. As discussed above, the proposed project would serve the needs of the existing main campus. As a result, no new students would be drawn to the campus, and thus there would be no increase demand for public services. For this reason, the proposed project would not result in a considerable contribution to cumulative public service impacts, and this impact would be less than significant.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
15. RECREATION –				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The only parks and recreation facility within the immediate vicinity of the main campus is Balboa Park. The campus is currently developed with educational facilities and athletic fields.

Discussion of Potential Project Impacts

a-b) **No Impact.** The proposed utility corridors and CHW plant would serve the needs of the existing main campus. As a result, no new students would be drawn to the campus, and thus there would be no increase in demand for nearby recreational facilities. In addition, there would be no need to construction additional for the same reason. There would be no impact with respect to these criteria.

Discussion of Potential Cumulative Impacts

Anticipated future development in the Balboa Park Station area would increase the extent of development in the area, thus resulting in a cumulative increase in the use of recreational facilities. As a result, future growth in the area may result in substantial physical deterioration of recreational facilities or accelerated deterioration or may require the construction or expansion of recreational facilities, the construction of which could cause significant environmental impacts. As discussed above, the proposed project would serve the needs of the existing main campus. As a result, no new students would be drawn to the campus, and thus there would be no increase in the use of recreational facilities by the campus population. Therefore, the project would make a less than considerable contribution to the cumulative impact.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
16. TRANSPORTATION/TRAFFIC – Would the project:				
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Local access to main campus is currently provided from Ocean Avenue, Frida Kahlo Way, and Judson Avenue, as well as from Marston Avenue and Havelock Street. Local transit service is provided by the San Francisco Municipal Railway (MUNI), which operates eight bus lines and three light rail lines within walking distance of campus. Regional motor vehicle access to campus is provided from I-280. Regional transit access is provided from the Balboa Park Bay Area Rapid Transit (BART) station, at the intersection of Ocean and Geneva Avenues and I-280 (about one-quarter mile from the campus). Major pedestrian

entries to the campus include Ocean Avenue at Howth Street, Frida Kahlo Way at Cloud Circle, the Phelan Loop (a MUNI turnaround south of the Balboa Reservoir), Judson Avenue near Genessee Street, and the extension of Havelock Street.

Discussion of Potential Project Impacts

a-b) **No Impact.** The proposed utility corridors and CHW plant would serve the needs of the existing main campus. As a result, no new students would be drawn to the campus, and thus there would be no increase in the number of Vehicle Miles Traveled (VMT). In addition, the proposed project would not include any improvements to area's transportation network, and thus would not induce automobile travel. There would be no impact with regard to this criterion.

c) **No Impact.** The proposed project does not include uses that would affect air traffic or result in changes to air patterns. There would be no impact with regard to this criterion.

d-f) **No Impact.** Construction of the proposed project would occur within the interior of the main campus, and therefore would not adversely impact nearby public roadways. Emergency access to nearby residences as well as public transit, bicycle, and pedestrian facilities would not be impeded by implementation of the proposed project. There would be no impact with regard to these criteria.

Discussion of Potential Cumulative Impacts

Anticipated future development in the Balboa Park Station area would increase the number of VMT in the area. In addition, transportation improvements envisioned under the Balboa Park Station Area Plan could also result in induced automobile travel. As discussed above, the proposed project would not result in an increase in VMT nor would it involve improvements to the area's transportation network that would induce automobile growth. Therefore, the project would make a less than considerable contribution to the cumulative impact.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
17. TRIBAL CULTURAL RESOURCES – Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is::				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Relevant Elements of the Project and its Setting

As discussed above, there is a low potential for unrecorded Native American resources on main campus. In addition, a search of the sacred lands file maintained by the HAHC did not indicate the presence of Native American resources in the immediate project area.

Discussion of Potential Project Impacts

a-b) ***Less than Significant With Mitigation.*** Assembly Bill (AB) 52, which came into effect on July 1, 2015, requires that lead agencies consider the effects of projects on tribal cultural resources and conduct notification and consultation with federally and non-federally recognized Native American tribes early in the environmental review process. According to AB 52, it is the responsibility of the tribes to formally request of a lead agency that they be notified of projects in the lead agency's jurisdiction so that they may request consultation. As of the publication of this Initial Study, no tribes have formally requested to be notified of projects within the jurisdiction of San Francisco Community College District. As discussed above, the main campus is developed and no tribal cultural resources are known to be present on the site. With respect to archaeological resources and human remains that may be present beneath the development, the implementation of **Mitigation Measure CUL-1** would ensure that should these resources be present, they will be protected from damage and properly evaluated. For this reason, the

proposed project is not expected to cause a substantial adverse change in the significance of tribal cultural resources, and this impact is considered less than significant.

Discussion of Potential Cumulative Impacts

Anticipated future development in the Balboa Park Station area has the potential to cause a substantial adverse change in the significance of a tribal cultural resource. However, with the implementation of mitigation list in the *Balboa Park Station Area Plan EIR*, potential impacts to tribal cultural resources would be reduced to a less than significant level. As discussed above, with the implementation of **Mitigation Measure CUL-1**, the proposed project would have less than significant project-level impacts on tribal cultural resources. Therefore, the proposed project's cumulative impact on cultural resources would be less than significant.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
18. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with applicable federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Water and wastewater service in the City and County of San Francisco is provided by the San Francisco Public Utilities Commission (SFPUC). As discussed above, water service is provided to the main campus by an existing 16-inch water main along Frida Kahlo Way and a 6-inch water main on Havelock Street while wastewater service is provide to the campus by an existing 39-inch combined City sewer main on Frida Kahlo Way and an existing 8-inch City sewer main on Havelock Street. Approximately 85 percent of the water delivered to SFPUC customers comes from Tuolumne River water stored in Hetch Hetchy Reservoir in Yosemite National Park, and the remaining 15 percent comes from runoff in the Alameda and Peninsula watersheds captured in reservoirs located in San Mateo and Alameda counties.

Wastewater in the City is treated at three wastewater treatment plants. The campus is served by the Southeast Water Pollution Control Plant (SWPCP), located in the City's Bayview neighborhood. The SWPCP has a capacity of 84.5 million gallons per day and currently treats approximately 63 million gallons per day.

Solid waste from the City and County of San Francisco is disposed of at the Recology Hay Road Landfill, a permitted Class III disposal site in Solano County. The Recology Hay Road Landfill has a permitted peak maximum daily disposal of 2,400 tons and estimated remaining capacity of approximately 30.4 million cubic yards or 82 percent of its permitted capacity.

Discussion of Potential Project Impacts

a, e) ***Less than Significant Impact.*** The proposed utility corridor would only convey wastewater and would not result in an increased amount of wastewater. However, the proposed CHW plant would generate approximately 12.1 million gallons per year, or approximately 0.6 million gallons per day. As discussed above, wastewater generated on the main campus is treated at the SWPCP. As the plant has approximately 21.5 million gallons per day of excess capacity, it is anticipated that wastewater generated by the CHW could be accommodated by the SWPCP. Consequently, the proposed project would not contribute to an exceedance of the wastewater treatment requirements for the plant, and this impact would be less than significant.

b) ***Less than Significant Impact.*** In accordance with the City and County of San Francisco 2015 Urban Water Management Plan (UWMP) there would be sufficient non-potable water supplies through the year 2040. Non-potable water supplies would be minimally affected by single and multiple dry year conditions as the majority of the supply is anticipated to be comprised of graywater and blackwater water (SFPUC 2016). Therefore, the increase in demand of approximately 8.2 million gallons per year from the proposed CHW plant could be sufficiently supplied.

Wastewater generated by the proposed CHW plant could be accommodated by the SWPCP. Therefore, the proposed project would not result in the construction of new wastewater treatment facilities or expansion of existing facilities.

c) ***Less than Significant Impact.*** The proposed project would add little to any new impervious surface to the campus. For this reason, the proposed project would not require or result in the construction of new storm water drainage facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects. Therefore, this impact is considered less than significant.

d) ***Less than Significant Impact.*** The proposed utility corridor would only convey potable and fire water and would not result in an increased demand for water. However, the proposed CHW plant would demand approximately 9.9 million gallons or 30.4 acre-feet of water per year. There are currently four chillers serving the campus east of Frida Kahlo Way which would be removed as part of the proposed project. Only two of the chillers are water cooled and these units currently demand 1.7 million gallons or 5.2 acre-feet of water per year. As a result, the proposed project would result in a net demand of 8.2 million gallons or 25.2 acre-feet per year.

Senate Bill (SB) 610 requires cities and counties to prepare a water supply assessment for large developments (i.e., more than 500 dwelling units or business establishments employing 1,000 persons or 500,000 square feet of floor space). The proposed project is neither a residential or commercial project. In

2014-2015, residential units in the City demanded approximately 100 gallons⁴ of water per day while commercial and industrial uses in the City demanded about 35 gallons⁵ of water per day per job. Based on this rate, a WSA would be required if a project would result in a demand of 12.78 to 18.25 million gallons per year (San Francisco 2016). As CCSF neither a city nor a county it is not subject to SB 610. In addition, the amount of water demanded by the proposed project would not exceed the thresholds for preparing as WSA in the City. For this reason, the proposed project would not result in a water demand that would require new or expanded entitlements, and this impact is less than significant.

f, g) *Less than Significant Impact.* The proposed utility corridors would not generate solid waste during operation while the amount of solid waste generated by the proposed CHW plant would be negligible as there would not be waste byproducts from the operation of the chillers. For this reason, the project would not place demands on the Recology Hay Road Landfill in Solano County, and this impact would be less than significant.

Discussion of Potential Cumulative Impacts

Anticipated future development in the Balboa Park Station area would place additional demands on the City's water supply and would generate additional wastewater that would require treatment. Implementation of the adopted Water System Improvement Program (WSIP) would improve the SFPUC's water supply reliability, particularly in the earlier years of the design drought under the Hetch Hetchy Regional Water System. In addition, planned improvement projects within the WSIP would help offset retail demands on RWS supplies if implemented.

In addition, anticipated future development in the area would generate additional solid waste that would require disposal. As stated in the Balboa Park Station Area Plan EIR, implementation of the plan area would produce additional solid waste but the additional wastes would be minimal compared to generation by total City residents. As the proposed project would not have a significant impact on solid waste, there would be a less than significant cumulative impact from solid waste generation.

⁴ Rate based on a total of 361,452 households and a residential demand of 36.3 million gallons per day.

⁵ Rate based on a total of 621,772 jobs and a non-residential demand of 21.88 million gallons per day.

Issues	Potentially Significant Impact	Less than Significant with Project Mitigation	Less Than Significant Impact	No Impact
19. MANDATORY FINDINGS OF SIGNIFICANCE – The lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur. Where prior to commencement of the environmental analysis a project proponent agrees to mitigation measures or project modifications that would avoid any significant effect on the environment or would mitigate the significant environmental effect, a lead agency need not prepare an EIR solely because without mitigation the environmental effects would have been significant (per Section 15065 of the <i>State CEQA Guidelines</i>):				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion of Potential Project Impacts

a) **Less than Significant Impact with Mitigation.** Please refer to responses under Biological Resources **Items 4(a)** through **4(f)**, and Cultural Resources **Items 5(a)** through **5(e)**, above. Development of the proposed project on the Indian Valley Campus would not significantly affect fish or wildlife habitat, nor would it eliminate examples of California history or prehistory. With the implementation of **Mitigation Measures BIO-1** and **BIO-2**, identified above in this Initial Study, and adherence to Policy AP 6580 of the Marin Community College District Administrative Procedures, all impacts would be reduced to a less than significant level and the proposed project would not degrade the quality of the environment. Impacts under this criterion would be less than significant.

b) *Less than Significant Impact*. Cumulative impacts for each environmental factor are addressed in the checklist above. As that discussion shows, the proposed project would not result in significant cumulative impacts. Furthermore, with the mitigation identified in this Initial Study, the contribution of the proposed project to cumulative impacts would not be cumulatively considerable.

c) *Less than Significant Impact*. The proposed project would be required to conform to a wide variety of mandatory obligations related to human safety and the quality of their environment, and the specific mitigation measures identified in this Initial Study would reduce all impacts to a less than significant level. Therefore, implementation of the proposed project would not cause substantial adverse effects on human beings, and the impact under this criterion would be less than significant.

VI. SUPPORTING INFORMATION SOURCES

City College of San Francisco (CCSF). 2004. *City College of San Francisco Master Plan EIR*. June.

City of County of San Francisco (San Francisco). 2008. *Balboa Park Station Area Plan EIR*. December 4.

California Department of Transportation (Caltrans). 2018. California Scenic Highway Program. Available at: <http://www.dot.ca.gov/design/lap/livability/scenic-highways/>. Accessed October 29, 2018.

California Department of Water Resources (DWR). 2004. California's Groundwater Bulletin 118: Novato Valley Basin. February. Available online at: <https://www.water.ca.gov/LegacyFiles/groundwater/bulletin118/basindescriptions/2-30.pdf>, accessed June 22, 2018.

Governor's Office of Planning and Research (OPR). 2008. Technical Advisory- CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review. June 19, 2008. Available online at: <http://opr.ca.gov/docs/june08-ceqa.pdf>, accessed June 22, 2018.

Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: The Physical Science Basis, Summary for Policymakers. Available online at: <https://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>, accessed June 22, 2018.

The San Francisco Public Utilities Commission (SFPUC). 2016. 2015 Urban Water Management Plan. June

United States Department of Transportation (U.S. DOT). 1998. Technical Noise Supplement. October.

U.S. Fish and Wildlife Service (USFWS). 2018. National Wetlands Inventory - Wetlands Mapper. Available online at: <https://www.fws.gov/wetlands/data/Mapper.html>, accessed March 6, 2019.

VII. INITIAL STUDY PREPARERS

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APPENDIX A

Proposed Mitigated Negative Declaration

PROPOSED MITIGATED NEGATIVE DECLARATION

Lead Agency:	San Francisco Community College District 50 Frida Kahlo Way San Francisco, CA 94112
Project Proponent:	San Francisco Community College District 50 Frida Kahlo Way San Francisco, CA 94112
Project Location:	Ocean Avenue (Main) Campus, located in the City and County of San Francisco.
Project Description:	<p>The proposed project involves a comprehensive utility upgrade involving all of the utility systems on campus, including the installation of a Chilled Water (CHW) Plant. To take advantage of common trenching and to reduce installation costs, the proposed upgrades will be installed in a single joint backbone trench that will be approximately 4,500 feet in length. This trench will include domestic water, fire water, chilled water, sewer, storm drain, gas, and electric telecommunications lines and be approximately 20 wide and six feet deep. Branch lines for each utility will extend from the joint trench to serve individual buildings. These lines will vary in length with branch gas lines extending a total of 500 feet, water, sewer, and storm drain branch lines extending at total of 1,500 feet each, and branch electrical and telecommunication lines extending a total of 2,500 feet. The new CHW plant would include three chillers and have a capacity of up to 3,000 tons.</p>
Mitigation Measures:	<p>Mitigation Measure AIR-1: The construction contractor(s) shall implement the following BMPs during project construction:</p> <ul style="list-style-type: none">• All exposed surfaces (e.g., parking areas, staging areas, soil stockpiles, graded areas, and unpaved access roads) shall be watered two times per day.• All haul trucks transporting soil, sand, or other loose material off-site shall be covered.• 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.• All vehicle speeds on unpaved roads shall be limited to 15 mph.• All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible and feasible.

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five 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.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure CUL-1: Should an archaeological artifact be discovered during project construction and excavation pursuant to CEQA Guidelines 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" shall be instituted. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 100 feet of the resources shall be halted and CCSF shall consult with a qualified archaeologist or paleontologist to assess the significance of the find (per Public Resource Code Section 5024.1, Title 14 CCR, Section 4852 and/or Public Resource Code 21083.2 in the event of a unique archaeological find). If any find is determined to be significant and will be adversely affected by the project, representatives of CCSF and the qualified archaeologist and/or paleontologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation (per CEQA Guidelines 15064.5 (b) and Public Resource Code 21083.2). All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and documented by the qualified archaeologist according to current professional standards (per the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR44716)).

Mitigation Measure NOI-1: To the extent feasible, CCSF shall limit construction activity to the hours of 7:00 AM to 6:00 PM on weekdays, and 7:00AM to 5:00 PM on Saturdays and Sundays. If nighttime construction is required, CCSF shall apply for, and abide by the terms of, a permit from the San Francisco Department of Public Works. CCSF shall require contractors to comply with the City Noise Ordinance.

Mitigation Measure NOI-2: Construction contractors shall implement the following measures to further minimize construction noise impacts on sensitive receptors:

- Construction equipment shall be properly maintained in accordance with manufacturers' specifications and shall be fitted with the best available noise suppression devices (e.g., mufflers, silencers, wraps). All impact tools shall be shrouded or shielded, and all intake and exhaust ports on power equipment shall be muffled or shielded.
- Construction equipment shall not idle for extended periods of time near noise-sensitive receptors.
- Stationary equipment (compressors, generators, and cement mixers) shall be located as far from sensitive receptors as feasible. Sound enclosures shall be used during noisy operations on-site.

Mitigation Measure NOI-3: In the event that construction activities would occur for an extended period of time adjacent to classrooms, or that construction noise could not be attenuated to an acceptable level inside classrooms, CCSF shall temporarily relocate classes to a different location on campus.

APPENDIX B

California Emissions Estimator Model Results

Construction

Tons/Year	ROG	NOX	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Exhaust	PM2.5 Total
2020	0.2	2.4	2.0	0.0	0.0	0.1	0.2	0.1	0.1
2021	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	0.2	2.4	2.0	0.0	0.0	0.1	0.2	0.1	0.1
Pounds/Year	497.4	4704.8	3962.0	7.2	91.6	248.8	340.4	231.8	263.0
Pounds/Day	1.4	12.9	10.9	0.0	0.3	0.7	0.9	0.6	0.7
2020 lbs/day	1.4	12.9	10.9	0.0	0.3	0.7	0.9	0.6	0.7
2021 lbs/day	0.4	1.3	1.3	0.0	0.0	0.1	0.1	0.1	0.1
Maximum Pounds/Day	1.4	12.9	10.9	0.0	0.3	0.7	0.9	0.6	0.7

Operations

Tons/Year	ROG	NOX	CO	SO2	PM10 Total	PM2.5 Total
Area	0.0	0.0	0.0	0.0	0.0	0.0
Energy	0.0	0.0	0.0	0.0	0.0	0.0
Mobile	0.0	0.0	0.0	0.0	0.0	0.0
Waste						
Water						
Total	0.0	0.0	0.0	0.0	0.0	0.0
Lbs/Year	77.6	29.8	45.3	0.2	10.5	4.0
Area	0.2	0.0	0.0	0.0	0.0	0.0
Energy	0.0	0.1	0.0	0.0	0.0	0.0
Mobile	0.0	0.0	0.1	0.0	0.0	0.0
Waste	0.0	0.0	0.0	0.0	0.0	0.0
Water	0.0	0.0	0.0	0.0	0.0	0.0
Lbs/Day	0.2	0.1	0.1	0.0	0.0	0.0

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CCSF Infrastructure Project

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	2.70	1000sqft	0.19	8,250.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	4.6	Precipitation Freq (Days)	64
Climate Zone	5			Operational Year	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	427	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Intensity Factor from PG&E Greenhouse Gas Emission Factors: Guidance for PG&E Customers Nov 2015

Land Use - Plant is 60 feet by 45 feet. Lot size approximately 8250 square feet.

Construction Phase - Assumes building construction and utility installation occurs at a similar time. Grading period extended to account for trenching export.

Off-road Equipment - Welders required per project engineer.

Off-road Equipment -

Off-road Equipment - Assumes four trenching crews.

Trips and VMT -

Demolition -

Grading - Import/export for trenching

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	100.00	240.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	1.00	5.00
tblGrading	AcresOfGrading	15.00	3.31
tblGrading	AcresOfGrading	2.50	0.00
tblGrading	MaterialExported	0.00	10,667.00
tblLandUse	LandUseSquareFeet	2,700.00	8,250.00
tblLandUse	LotAcreage	0.06	0.19
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblProjectCharacteristics	CO2IntensityFactor	641.35	427

2.0 Emissions Summary

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2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2487	2.3524	1.9810	3.5800e-003	0.0458	0.1244	0.1702	0.0156	0.1159	0.1315	0.0000	320.6124	320.6124	0.0827	0.0000	322.6801
2021	0.0716	0.2384	0.2354	3.8000e-004	1.3300e-003	0.0129	0.0142	3.6000e-004	0.0121	0.0124	0.0000	31.9727	31.9727	8.4000e-003	0.0000	32.1826
Maximum	0.2487	2.3524	1.9810	3.5800e-003	0.0458	0.1244	0.1702	0.0156	0.1159	0.1315	0.0000	320.6124	320.6124	0.0827	0.0000	322.6801

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2487	2.3524	1.9810	3.5800e-003	0.0458	0.1244	0.1702	0.0156	0.1159	0.1315	0.0000	320.6121	320.6121	0.0827	0.0000	322.6798
2021	0.0716	0.2384	0.2354	3.8000e-004	1.3300e-003	0.0129	0.0142	3.6000e-004	0.0121	0.0124	0.0000	31.9727	31.9727	8.4000e-003	0.0000	32.1826
Maximum	0.2487	2.3524	1.9810	3.5800e-003	0.0458	0.1244	0.1702	0.0156	0.1159	0.1315	0.0000	320.6121	320.6121	0.0827	0.0000	322.6798

[illegible]

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	1.2278	1.2278
2	4-1-2020	6-30-2020	0.5347	0.5347
3	7-1-2020	9-30-2020	0.4181	0.4181
4	10-1-2020	12-31-2020	0.4183	0.4183
5	1-1-2021	3-31-2021	0.3133	0.3133
		Highest	1.2278	1.2278

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0365	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Energy	1.1000e-003	0.0100	8.4100e-003	6.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	22.9763	22.9763	1.0300e-003	3.7000e-004	23.1121
Mobile	1.1900e-003	4.9100e-003	0.0142	5.0000e-005	4.4200e-003	6.0000e-005	4.4800e-003	1.1900e-003	5.0000e-005	1.2500e-003	0.0000	4.7565	4.7565	2.0000e-004	0.0000	4.7615
Waste						0.0000	0.0000		0.0000	0.0000	0.6800	0.0000	0.6800	0.0402	0.0000	1.6847
Water						0.0000	0.0000		0.0000	0.0000	0.1981	0.6544	0.8525	0.0204	4.9000e-004	1.5081
Total	0.0388	0.0149	0.0226	1.1000e-004	4.4200e-003	8.2000e-004	5.2400e-003	1.1900e-003	8.1000e-004	2.0100e-003	0.8781	28.3872	29.2653	0.0618	8.6000e-004	31.0665

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2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0365	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Energy	1.1000e-003	0.0100	8.4100e-003	6.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	22.9763	22.9763	1.0300e-003	3.7000e-004	23.1121
Mobile	1.1900e-003	4.9100e-003	0.0142	5.0000e-005	4.4200e-003	6.0000e-005	4.4800e-003	1.1900e-003	5.0000e-005	1.2500e-003	0.0000	4.7565	4.7565	2.0000e-004	0.0000	4.7615
Waste						0.0000	0.0000		0.0000	0.0000	0.6800	0.0000	0.6800	0.0402	0.0000	1.6847
Water						0.0000	0.0000		0.0000	0.0000	0.1981	0.6544	0.8525	0.0204	4.9000e-004	1.5081
Total	0.0388	0.0149	0.0226	1.1000e-004	4.4200e-003	8.2000e-004	5.2400e-003	1.1900e-003	8.1000e-004	2.0100e-003	0.8781	28.3872	29.2653	0.0618	8.6000e-004	31.0665

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	1/14/2020	5	10	
2	Site Preparation	Site Preparation	1/15/2020	1/21/2020	5	5	
3	Grading	Grading	1/22/2020	3/17/2020	5	40	
4	Trenching	Trenching	1/22/2020	4/14/2020	5	60	
5	Building Construction	Building Construction	3/25/2020	2/23/2021	5	240	
6	Paving	Paving	2/24/2021	3/9/2021	5	10	
7	Architectural Coating	Architectural Coating	3/10/2021	3/23/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3.31

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 12,375; Non-Residential Outdoor: 4,125; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Trenching	Excavators	4	6.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Trenching	Trenchers	4	6.00	78	0.50
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	2	6.00	46	0.45
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Graders	1	6.00	187	0.41

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	38.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	13.00	0.00	1,333.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	10	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	3.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.4000e-003	0.0000	4.4000e-003	6.7000e-004	0.0000	6.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3400e-003	0.0394	0.0381	6.0000e-005		2.3400e-003	2.3400e-003		2.2300e-003	2.2300e-003	0.0000	5.2038	5.2038	9.8000e-004	0.0000	5.2284
Total	4.3400e-003	0.0394	0.0381	6.0000e-005	4.4000e-003	2.3400e-003	6.7400e-003	6.7000e-004	2.2300e-003	2.9000e-003	0.0000	5.2038	5.2038	9.8000e-004	0.0000	5.2284

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3.2 Demolition - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5000e-004	6.6200e-003	1.9600e-003	2.0000e-005	3.2000e-004	2.0000e-005	3.4000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.6974	1.6974	3.0000e-004	0.0000	1.7050
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.0000e-004	1.1200e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3755	0.3755	1.0000e-005	0.0000	0.3757
Total	3.0000e-004	6.7200e-003	3.0800e-003	2.0000e-005	7.2000e-004	2.0000e-005	7.4000e-004	2.0000e-004	2.0000e-005	2.2000e-004	0.0000	2.0729	2.0729	3.1000e-004	0.0000	2.0807

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.4000e-003	0.0000	4.4000e-003	6.7000e-004	0.0000	6.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3400e-003	0.0394	0.0381	6.0000e-005		2.3400e-003	2.3400e-003		2.2300e-003	2.2300e-003	0.0000	5.2038	5.2038	9.8000e-004	0.0000	5.2284
Total	4.3400e-003	0.0394	0.0381	6.0000e-005	4.4000e-003	2.3400e-003	6.7400e-003	6.7000e-004	2.2300e-003	2.9000e-003	0.0000	5.2038	5.2038	9.8000e-004	0.0000	5.2284

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3.2 Demolition - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5000e-004	6.6200e-003	1.9600e-003	2.0000e-005	3.2000e-004	2.0000e-005	3.4000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.6974	1.6974	3.0000e-004	0.0000	1.7050
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.0000e-004	1.1200e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3755	0.3755	1.0000e-005	0.0000	0.3757
Total	3.0000e-004	6.7200e-003	3.0800e-003	2.0000e-005	7.2000e-004	2.0000e-005	7.4000e-004	2.0000e-004	2.0000e-005	2.2000e-004	0.0000	2.0729	2.0729	3.1000e-004	0.0000	2.0807

3.3 Site Preparation - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7100e-003	0.0211	0.0102	2.0000e-005		8.4000e-004	8.4000e-004		7.7000e-004	7.7000e-004	0.0000	2.1398	2.1398	6.9000e-004	0.0000	2.1571
Total	1.7100e-003	0.0211	0.0102	2.0000e-005	0.0000	8.4000e-004	8.4000e-004	0.0000	7.7000e-004	7.7000e-004	0.0000	2.1398	2.1398	6.9000e-004	0.0000	2.1571

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3.3 Site Preparation - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0939	0.0939	0.0000	0.0000	0.0939
Total	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0939	0.0939	0.0000	0.0000	0.0939

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7100e-003	0.0211	0.0102	2.0000e-005		8.4000e-004	8.4000e-004		7.7000e-004	7.7000e-004	0.0000	2.1398	2.1398	6.9000e-004	0.0000	2.1571
Total	1.7100e-003	0.0211	0.0102	2.0000e-005	0.0000	8.4000e-004	8.4000e-004	0.0000	7.7000e-004	7.7000e-004	0.0000	2.1398	2.1398	6.9000e-004	0.0000	2.1571

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3.3 Site Preparation - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0939	0.0939	0.0000	0.0000	0.0939
Total	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0939	0.0939	0.0000	0.0000	0.0939

3.4 Grading - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0184	0.0000	0.0184	8.7000e-003	0.0000	8.7000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0245	0.2520	0.1796	3.4000e-004		0.0124	0.0124		0.0117	0.0117	0.0000	29.5333	29.5333	6.7600e-003	0.0000	29.7022
Total	0.0245	0.2520	0.1796	3.4000e-004	0.0184	0.0124	0.0308	8.7000e-003	0.0117	0.0204	0.0000	29.5333	29.5333	6.7600e-003	0.0000	29.7022

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3.4 Grading - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3200e-003	0.2322	0.0687	5.6000e-004	0.0112	6.8000e-004	0.0119	3.0700e-003	6.5000e-004	3.7200e-003	0.0000	59.5415	59.5415	0.0107	0.0000	59.8081
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.3000e-004	5.8400e-003	2.0000e-005	2.0500e-003	2.0000e-005	2.0700e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.9526	1.9526	4.0000e-005	0.0000	1.9537
Total	6.1100e-003	0.2327	0.0745	5.8000e-004	0.0132	7.0000e-004	0.0139	3.6200e-003	6.6000e-004	4.2800e-003	0.0000	61.4941	61.4941	0.0107	0.0000	61.7618

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0184	0.0000	0.0184	8.7000e-003	0.0000	8.7000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0245	0.2520	0.1796	3.4000e-004		0.0124	0.0124		0.0117	0.0117	0.0000	29.5333	29.5333	6.7600e-003	0.0000	29.7022
Total	0.0245	0.2520	0.1796	3.4000e-004	0.0184	0.0124	0.0308	8.7000e-003	0.0117	0.0204	0.0000	29.5333	29.5333	6.7600e-003	0.0000	29.7022

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3.4 Grading - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3200e-003	0.2322	0.0687	5.6000e-004	0.0112	6.8000e-004	0.0119	3.0700e-003	6.5000e-004	3.7200e-003	0.0000	59.5415	59.5415	0.0107	0.0000	59.8081
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.3000e-004	5.8400e-003	2.0000e-005	2.0500e-003	2.0000e-005	2.0700e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.9526	1.9526	4.0000e-005	0.0000	1.9537
Total	6.1100e-003	0.2327	0.0745	5.8000e-004	0.0132	7.0000e-004	0.0139	3.6200e-003	6.6000e-004	4.2800e-003	0.0000	61.4941	61.4941	0.0107	0.0000	61.7618

3.5 Trenching - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0693	0.6536	0.6340	9.1000e-004		0.0421	0.0421		0.0387	0.0387	0.0000	79.7945	79.7945	0.0258	0.0000	80.4396
Total	0.0693	0.6536	0.6340	9.1000e-004		0.0421	0.0421		0.0387	0.0387	0.0000	79.7945	79.7945	0.0258	0.0000	80.4396

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3.5 Trenching - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2800e-003	1.5200e-003	0.0169	6.0000e-005	5.9300e-003	5.0000e-005	5.9700e-003	1.5800e-003	4.0000e-005	1.6200e-003	0.0000	5.6325	5.6325	1.2000e-004	0.0000	5.6356
Total	2.2800e-003	1.5200e-003	0.0169	6.0000e-005	5.9300e-003	5.0000e-005	5.9700e-003	1.5800e-003	4.0000e-005	1.6200e-003	0.0000	5.6325	5.6325	1.2000e-004	0.0000	5.6356

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0693	0.6536	0.6340	9.1000e-004		0.0421	0.0421		0.0387	0.0387	0.0000	79.7944	79.7944	0.0258	0.0000	80.4395
Total	0.0693	0.6536	0.6340	9.1000e-004		0.0421	0.0421		0.0387	0.0387	0.0000	79.7944	79.7944	0.0258	0.0000	80.4395

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3.5 Trenching - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2800e-003	1.5200e-003	0.0169	6.0000e-005	5.9300e-003	5.0000e-005	5.9700e-003	1.5800e-003	4.0000e-005	1.6200e-003	0.0000	5.6325	5.6325	1.2000e-004	0.0000	5.6356
Total	2.2800e-003	1.5200e-003	0.0169	6.0000e-005	5.9300e-003	5.0000e-005	5.9700e-003	1.5800e-003	4.0000e-005	1.6200e-003	0.0000	5.6325	5.6325	1.2000e-004	0.0000	5.6356

3.6 Building Construction - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1389	1.1321	1.0138	1.5400e-003		0.0659	0.0659		0.0617	0.0617	0.0000	129.5765	129.5765	0.0369	0.0000	130.4990
Total	0.1389	1.1321	1.0138	1.5400e-003		0.0659	0.0659		0.0617	0.0617	0.0000	129.5765	129.5765	0.0369	0.0000	130.4990

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3.6 Building Construction - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7000e-004	0.0126	3.7400e-003	3.0000e-005	6.6000e-004	6.0000e-005	7.2000e-004	1.9000e-004	5.0000e-005	2.4000e-004	0.0000	2.7958	2.7958	3.7000e-004	0.0000	2.8051
Worker	9.2000e-004	6.1000e-004	6.8100e-003	3.0000e-005	2.3900e-003	2.0000e-005	2.4100e-003	6.4000e-004	2.0000e-005	6.5000e-004	0.0000	2.2755	2.2755	5.0000e-005	0.0000	2.2768
Total	1.2900e-003	0.0133	0.0106	6.0000e-005	3.0500e-003	8.0000e-005	3.1300e-003	8.3000e-004	7.0000e-005	8.9000e-004	0.0000	5.0713	5.0713	4.2000e-004	0.0000	5.0819

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1389	1.1321	1.0138	1.5400e-003		0.0659	0.0659		0.0617	0.0617	0.0000	129.5764	129.5764	0.0369	0.0000	130.4989
Total	0.1389	1.1321	1.0138	1.5400e-003		0.0659	0.0659		0.0617	0.0617	0.0000	129.5764	129.5764	0.0369	0.0000	130.4989

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3.6 Building Construction - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7000e-004	0.0126	3.7400e-003	3.0000e-005	6.6000e-004	6.0000e-005	7.2000e-004	1.9000e-004	5.0000e-005	2.4000e-004	0.0000	2.7958	2.7958	3.7000e-004	0.0000	2.8051
Worker	9.2000e-004	6.1000e-004	6.8100e-003	3.0000e-005	2.3900e-003	2.0000e-005	2.4100e-003	6.4000e-004	2.0000e-005	6.5000e-004	0.0000	2.2755	2.2755	5.0000e-005	0.0000	2.2768
Total	1.2900e-003	0.0133	0.0106	6.0000e-005	3.0500e-003	8.0000e-005	3.1300e-003	8.3000e-004	7.0000e-005	8.9000e-004	0.0000	5.0713	5.0713	4.2000e-004	0.0000	5.0819

3.6 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0234	0.1947	0.1870	2.9000e-004		0.0106	0.0106		9.9400e-003	9.9400e-003	0.0000	24.3799	24.3799	6.8500e-003	0.0000	24.5511
Total	0.0234	0.1947	0.1870	2.9000e-004		0.0106	0.0106		9.9400e-003	9.9400e-003	0.0000	24.3799	24.3799	6.8500e-003	0.0000	24.5511

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3.6 Building Construction - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0000e-005	2.1800e-003	6.6000e-004	1.0000e-005	1.2000e-004	0.0000	1.3000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.5193	0.5193	7.0000e-005	0.0000	0.5210
Worker	1.6000e-004	1.0000e-004	1.1800e-003	0.0000	4.5000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4128	0.4128	1.0000e-005	0.0000	0.4130
Total	2.2000e-004	2.2800e-003	1.8400e-003	1.0000e-005	5.7000e-004	0.0000	5.8000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.9320	0.9320	8.0000e-005	0.0000	0.9340

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0234	0.1947	0.1870	2.9000e-004		0.0106	0.0106		9.9400e-003	9.9400e-003	0.0000	24.3799	24.3799	6.8500e-003	0.0000	24.5511
Total	0.0234	0.1947	0.1870	2.9000e-004		0.0106	0.0106		9.9400e-003	9.9400e-003	0.0000	24.3799	24.3799	6.8500e-003	0.0000	24.5511

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3.6 Building Construction - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0000e-005	2.1800e-003	6.6000e-004	1.0000e-005	1.2000e-004	0.0000	1.3000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.5193	0.5193	7.0000e-005	0.0000	0.5210
Worker	1.6000e-004	1.0000e-004	1.1800e-003	0.0000	4.5000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4128	0.4128	1.0000e-005	0.0000	0.4130
Total	2.2000e-004	2.2800e-003	1.8400e-003	1.0000e-005	5.7000e-004	0.0000	5.8000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.9320	0.9320	8.0000e-005	0.0000	0.9340

3.7 Paving - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6100e-003	0.0336	0.0355	6.0000e-005		1.7700e-003	1.7700e-003		1.6400e-003	1.6400e-003	0.0000	4.6962	4.6962	1.3700e-003	0.0000	4.7304
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.6100e-003	0.0336	0.0355	6.0000e-005		1.7700e-003	1.7700e-003		1.6400e-003	1.6400e-003	0.0000	4.6962	4.6962	1.3700e-003	0.0000	4.7304

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3.7 Paving - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.6000e-004	1.8700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6518	0.6518	1.0000e-005	0.0000	0.6521
Total	2.6000e-004	1.6000e-004	1.8700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6518	0.6518	1.0000e-005	0.0000	0.6521

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6100e-003	0.0336	0.0355	6.0000e-005		1.7700e-003	1.7700e-003		1.6400e-003	1.6400e-003	0.0000	4.6962	4.6962	1.3700e-003	0.0000	4.7304
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.6100e-003	0.0336	0.0355	6.0000e-005		1.7700e-003	1.7700e-003		1.6400e-003	1.6400e-003	0.0000	4.6962	4.6962	1.3700e-003	0.0000	4.7304

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3.7 Paving - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.6000e-004	1.8700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6518	0.6518	1.0000e-005	0.0000	0.6521
Total	2.6000e-004	1.6000e-004	1.8700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6518	0.6518	1.0000e-005	0.0000	0.6521

3.8 Architectural Coating - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0430					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	0.0441	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788

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3.8 Architectural Coating - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.0000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0362	0.0362	0.0000	0.0000	0.0362
Total	1.0000e-005	1.0000e-005	1.0000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0362	0.0362	0.0000	0.0000	0.0362

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0430					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	0.0441	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788

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3.8 Architectural Coating - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.0000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0362	0.0362	0.0000	0.0000	0.0362
Total	1.0000e-005	1.0000e-005	1.0000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0362	0.0362	0.0000	0.0000	0.0362

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1900e-003	4.9100e-003	0.0142	5.0000e-005	4.4200e-003	6.0000e-005	4.4800e-003	1.1900e-003	5.0000e-005	1.2500e-003	0.0000	4.7565	4.7565	2.0000e-004	0.0000	4.7615
Unmitigated	1.1900e-003	4.9100e-003	0.0142	5.0000e-005	4.4200e-003	6.0000e-005	4.4800e-003	1.1900e-003	5.0000e-005	1.2500e-003	0.0000	4.7565	4.7565	2.0000e-004	0.0000	4.7615

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	4.05	4.05	4.05	11,824	11,824
Total	4.05	4.05	4.05	11,824	11,824

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.606408	0.040118	0.191445	0.088323	0.014900	0.004926	0.028280	0.008891	0.004289	0.004272	0.006741	0.000931	0.000477

5.0 Energy Detail

Historical Energy Use: N

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5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	12.0801	12.0801	8.2000e-004	1.7000e-004	12.1512
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	12.0801	12.0801	8.2000e-004	1.7000e-004	12.1512
NaturalGas Mitigated	1.1000e-003	0.0100	8.4100e-003	6.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	10.8962	10.8962	2.1000e-004	2.0000e-004	10.9610
NaturalGas Unmitigated	1.1000e-003	0.0100	8.4100e-003	6.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	10.8962	10.8962	2.1000e-004	2.0000e-004	10.9610

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	204188	1.1000e-003	0.0100	8.4100e-003	6.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	10.8962	10.8962	2.1000e-004	2.0000e-004	10.9610
Total		1.1000e-003	0.0100	8.4100e-003	6.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	10.8962	10.8962	2.1000e-004	2.0000e-004	10.9610

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5.2 Energy by Land Use - NaturalGas**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	204188	1.1000e-003	0.0100	8.4100e-003	6.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	10.8962	10.8962	2.1000e-004	2.0000e-004	10.9610
Total		1.1000e-003	0.0100	8.4100e-003	6.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	10.8962	10.8962	2.1000e-004	2.0000e-004	10.9610

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	62370	12.0801	8.2000e-004	1.7000e-004	12.1512
Total		12.0801	8.2000e-004	1.7000e-004	12.1512

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5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	62370	12.0801	8.2000e-004	1.7000e-004	12.1512
Total		12.0801	8.2000e-004	1.7000e-004	12.1512

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0365	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Unmitigated	0.0365	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

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6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.3000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0322					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Total	0.0365	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.3000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0322					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Total	0.0365	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

7.0 Water Detail

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7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.8525	0.0204	4.9000e-004	1.5081
Unmitigated	0.8525	0.0204	4.9000e-004	1.5081

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0.624375 / 40	0.8525	0.0204	4.9000e-004	1.5081
Total		0.8525	0.0204	4.9000e-004	1.5081

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7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0.624375 / 0	0.8525	0.0204	4.9000e-004	1.5081
Total		0.8525	0.0204	4.9000e-004	1.5081

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.6800	0.0402	0.0000	1.6847
Unmitigated	0.6800	0.0402	0.0000	1.6847

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8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	3.35	0.6800	0.0402	0.0000	1.6847
Total		0.6800	0.0402	0.0000	1.6847

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	3.35	0.6800	0.0402	0.0000	1.6847
Total		0.6800	0.0402	0.0000	1.6847

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation
