

DRAFT

**Greenhouse Replacement  
and Restroom Modernization Project**

*Prepared for:*

**North Orange County Community College District**

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Anaheim, California

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# Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
ADA	American Disability Act
AQMP	Air Quality Management Plan
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Services
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CH <sub>4</sub>	methane
City	City of Fullerton
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CRHR	California Register of Historical Resources
dBA	A-weighted decibel
District	North Orange County Community College District
EIR	environmental impact report
FHSZ	fire hazard severity zone
FMP	Facilities Master Plan
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
ips	inches per second
IS	initial study
L <sub>eq</sub>	energy equivalent level
LST	localized significance threshold
MM	Mitigation Measure
MND	mitigated negative declaration
MT CO <sub>2</sub> e	metric tons of carbon dioxide equivalent
N <sub>2</sub> O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NF <sub>3</sub>	nitrogen trifluoride
NO <sub>2</sub>	nitrogen dioxide
NRHP	National Register of Historic Places
O <sub>3</sub>	ozone
OCWD	Orange County Water District
PFC	perfluorocarbon
P-L	Public Land
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to 10 microns
PM <sub>2.5</sub>	particulate matter with an aerodynamic diameter less than or equal to 2.5 microns
PRC	Public Resources Code
proposed project	proposed Greenhouse Replacement and Restroom Modernization Project
RTP	Regional Transportation Plan
SB	Senate Bill

Acronym/Abbreviation	Definition
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SF <sub>6</sub>	sulfur hexafluoride
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
SR	State Route
TAC	toxic air contaminant
VMT	vehicle miles traveled
VOC	volatile organic compound

# 1 Introduction

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## 1.1 Project Overview

The North Orange County Community College District (District) is comprised of Cypress College, Fullerton College, and the School of Continuing Education, which has campuses in Cypress, Fullerton, and Anaheim. In 2014, voters passed the \$574 million Measure J Facilities Bond Program. The Measure J Bond Program enables upgrades on all campuses for antiquated science labs, lecture halls, technology, and instructional equipment to better prepare students for growing fields of study and high-skill careers. In accordance with Bond Measure J, Fullerton College began undertaking a comprehensive improvement and building program to implement the Fullerton College Facilities Master Plan (FMP). The District Board of Trustees approved the Fullerton College Facilities Master Plan Program Environmental Impact Report (Program EIR; SCH No. 201611016) on December 12, 2017.

As part of the approved 2017 Program EIR, the District proposed new additions to the Horticulture Lab Complex, including new greenhouses and a new lab facility to replace existing buildings. The 2017 Program EIR assumed the new facilities would replace the existing square footage, totaling 26,900 assignable square feet (32,300 gross square feet), and each facility would be one story in height. The District is now proposing the replacement of the existing greenhouse with a new Venlo-style greenhouse, renovations to the existing restroom building and upgrading pathway accessibility to meet American Disability Act (ADA) code compliance, and striping parking spaces within the Horticulture Complex 1600, as part of the proposed Greenhouse Replacement and Restroom Modernization Project (proposed project).

## 1.2 California Environmental Quality Act Compliance

The California Environmental Quality Act (CEQA), a statewide environmental law contained in California Public Resources Code (PRC), Sections 21000–21177, applies to most public agency decisions to carry out, authorize, or approve actions that have the potential to adversely affect the environment (PRC Section 21000 et seq.). The overarching goal of CEQA is to protect the physical environment. To achieve that goal, CEQA requires that public agencies identify the environmental consequences of their discretionary actions and consider alternatives and mitigation measures that could avoid or reduce significant adverse impacts when avoidance or reduction is feasible. It also gives other public agencies and the public an opportunity to comment on the information. If significant adverse impacts cannot be avoided, reduced, or mitigated to below a level of significance, the public agency is required to prepare an EIR and balance the project's environmental concerns with other goals and benefits in a statement of overriding considerations. In accordance with CEQA, the District, as the lead agency, prepared the Program EIR (SCH No. 2016111016).

Compared to the previously proposed facilities evaluated within the Program EIR, the proposed project would result in increased height and additional improvements that were not previously analyzed. Since the increased height of the proposed greenhouse and additional improvements to the restroom could result in environmental effects not previously analyzed within the Program EIR, this Initial Study (IS)/Mitigated Negative Declaration (MND) has been prepared for the proposed project in accordance with Section 15168, Program EIR, of the state CEQA Guidelines.

## 1.3 Initial Study Checklist

Dudek, under the District's guidance, prepared the proposed project's Environmental Checklist (i.e., IS) per CEQA Guidelines, Sections 15063–15065. The CEQA Guidelines include a suggested checklist to indicate whether a

project would have an adverse impact on the environment. The checklist is found in Chapter 3 of this document. Following the Environmental Checklist, Sections 3.1 through 3.21 include an explanation and discussion of each significance determination made in the checklist for the proposed project.

For this IS/MND, the following four possible responses to each individual environmental issue area are included in the checklist:

1. Potentially Significant Impact
2. Less-Than-Significant Impact with Mitigation Incorporated
3. Less-Than-Significant Impact
4. No Impact

The checklist and accompanying explanation of checklist responses provide the information and analysis necessary to assess relative environmental impacts of the proposed project. In doing so, the District will determine the extent of additional environmental review, if any, for the proposed project.

## 1.4 Public Review Process

Public participation is an essential part of the CEQA process. As required by CEQA, the District shall provide adequate time for other public agencies and members of the public to review and comment on a CEQA document that has been prepared. This MND has been made available to members of the public, agencies, and interested parties for a 30-day public review period in accordance with CEQA Guidelines Section 15105. Public review of the MND is intended to focus “on the proposed finding that the project will not have a significant effect on the environment. If persons and public agencies believe that the project may have a significant effect, they should: (1) identify the specific effect, (2) explain why they believe the effect would occur, and (3) explain why they believe the effect would be significant” (14 CCR 15204).

This MND is available for review during the 30-day public review period at the following locations:

### In-Person

- **North Orange County Community College District:** 1830 West Romney Drive, Anaheim, California 92801
- **Fullerton College:** 321 East Chapman Avenue Fullerton, California 92832
- **Fullerton Public Library:** 353 West Commonwealth Avenue, Fullerton, California 92832

### Online

<https://www.fullcoll.edu/campusprojects/>

Once the 30-day public review period has concluded, any advisory body of a public agency shall consider the MND together with any comments received during the public review process. The decision-making body shall adopt the proposed MND if it finds there is no substantial evidence that the project will have a significant effect on the environment and that the MND reflects the lead agency’s independent judgment and analysis. If the project is approved, the District shall then file a Notice of Determination at the Orange County Recorder-Clerk’s office within 5 working days after deciding to carry out or approve the project.



## 2 Project Description and Setting

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### 2.1 Project Location

#### **Regional Location**

Fullerton College is located at 321 East Chapman Avenue in the City of Fullerton (City) and occupies an approximately 70-acre site in northwestern Orange County. The City is surrounded by La Habra and Brea to the north, Placentia to the east, Anaheim to the south, and Buena Park to the west. Regional access to the City is provided via State Route (SR) 57 to the east, SR-91 to the south, Interstate 5 to the southwest, and SR-90 to the north. Specifically, Fullerton College is bounded by residential development to the north, south, and east and Fullerton Union High School to the west (Figure 1, Project Location).

#### **Project Site**

The project site is within the Horticulture 1600 Complex, located in the northeastern portion of Fullerton College's campus. The Horticulture 1600 Complex is located to the north of Parking Lot 5, west of the temporary classroom facilities, south of North Berkeley Avenue, and east of the Fullerton Union High School farmhouse and baseball field (Figure 2, Existing Campus).

### 2.2 Environmental Setting

#### **Existing Land Uses**

The project site is located within the Horticulture Complex 1600, which is comprised of the main Horticulture classroom facility (Horticulture 1600) and existing parking to the east; the restroom facility, walkways, outdoor gazebo, and storage in the center; and the existing greenhouse and associated nursey facilities on the west. A portion of the project site consists of one greenhouse and is shown as Building 1613 on Figure 2. The existing greenhouse structure is 1,400 square feet, and 22 feet in height. The restroom building proposed for modernization is shown as Building 1690 on Figure 2. The existing brick structure has two restrooms with south-facing entrances. There are currently paved areas located throughout the Horticulture Complex 1600.

#### **Description in the 2017 Facilities Master Plan**

The Program EIR (District 2017) provides the following description for the construction and demolition of the Horticulture 1600 Complex:

#### ***Construction***

The Horticulture and Vocational Services Center would be in the northeastern portion of the campus (where the existing Horticulture buildings are currently located). New greenhouses would be constructed along with an instructional facility that will include lecture space and lab space for the Biotechnical program and kitchen facilities for the Food/Nutrition program. The new facilities would total 26,900 assignable square feet (32,300 gross square feet), and each facility would be one story in height.

### ***Demolition***

The Horticulture Building 1600 Complex is located in the northeastern corner of campus. The existing buildings range from 17 to 78 years old and currently support the Horticulture program. To accommodate growth in the Horticulture program, the existing buildings would be replaced with state-of-the-art buildings and outdoor space. The existing buildings are at the end of their useful life.

## 2.3 Proposed Project

The proposed project involves the replacement of the existing greenhouse with a new Venlo-style greenhouse, renovations to the existing restroom facilities and upgrading pathway accessibility to meet current ADA code requirements, and striped parking spaces within the Horticulture Complex 1600 (Figure 3, Site Plan).

The existing 1,440 square foot greenhouse facility would be removed (see Building 1613 in Figure 2). A new 2,880-square-foot Venlo-style greenhouse, totaling 22 feet in height would be installed in its place. The proposed greenhouse structure would consist of a greenhouse divided by a partition wall; each side would be 30 by 48 feet. The entrances to each side would be provided from the east and west. The greenhouse would be constructed with pre-drilled galvanized steel poles, and 8mm twinwall polycarbonate opal for the partition wall, a roof, and exterior walls (Figure 4, Greenhouse Elevations). Additionally, the proposed project involves interior renovations to the restroom facilities with updated toilets, sinks, and other interior components to meet ADA code requirements. The proposed project may also involve some minor exterior modifications (Figure 5, Restroom Elevations). Other project components include new access and striping parking spaces. The pathway from the restroom facilities leading towards the proposed greenhouse structure towards the east and the directly south of the restroom facilities would be paved. The proposed project would also stripe parking spaces, inclusive of a handicap accessible van space and five passenger vehicle spaces, located on the western edge of the Horticulture Complex 1600.

## 2.4 Construction and Operation

### **Construction**

Construction of the proposed project is expected to begin in June 2020 and last approximately 3 months. Construction activities would include demolition, site preparation, grading/earthwork, building construction, and architectural coating. During the most intensive phase of construction, approximately four workers would be required per day, and approximately eight truck trips would occur per day. Off-road construction equipment that would be used during construction would include a concrete/industrial saw, a skid steer loader, cement and mortar mixers, welders, air compressors, and a forklift.

### **Operation**

Once the new greenhouses are operational, they will continue to serve the Horticulture Department at Fullerton College. Similarly, the restroom operations would return to its existing operations upon completion of construction activities. No increase in student enrollment is anticipated.

## 2.5 Project Approvals

The District, as lead agency for the proposed project, is responsible for CEQA clearance and site plan review. A public agency, other than the lead agency, that has discretionary approval over the project is known as a “responsible agency,” as defined by the CEQA Guidelines (14 CCR 15000 et seq.). The responsible agency and corresponding approvals for this project are listed as follows:

- Division of the State Architect
  - Plan Review

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# 3 Initial Study Checklist

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**1. Project title:**

Greenhouse Replacement and Restroom Modernization

**2. Lead agency name and address:**

North Orange County Community College District  
1830A West Romneya Drive  
Anaheim, California 92801

**3. Contact person and phone number:**

Richard Williams, District Director, Facilities Planning and Construction, 714.808.4893

**4. Project location:**

Fullerton College Horticulture Complex  
321 East Chapman Avenue  
Fullerton, California 92832

**5. Project sponsor's name and address:**

North Orange County Community College District  
1830A West Romneya Drive  
Anaheim, California 92801

**6. General plan designation:**

School

**7. Zoning:**

P-L Public Land

**8. Description of project. (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary):**

Refer to Section 2.3, Proposed Project.

**9. Surrounding land uses and setting (Briefly describe the project's surroundings):**

The project site is located within the Fullerton College campus in the City. Fullerton College is bounded by residential development to the north, south, and east and Fullerton Union High School to the west. The Horticulture 1600 Complex is located to the north of Parking Lot 5, west of the temporary classroom facilities, south of North Berkeley Avenue, and east of the Fullerton Union High School farmhouse and baseball field.

**10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):**

- Division of the State Architect for plan review approval

**11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?**

Yes; see Section 3.18, Tribal Cultural Resources.

**Environmental Factors Potentially Affected**

The environmental factors checked below would be potentially 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 type="checkbox"/> Air Quality                        |
| <input type="checkbox"/> Biological Resources          | <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Energy                             |
| <input type="checkbox"/> Geology and Soils             | <input type="checkbox"/> Greenhouse Gas Emissions           | <input type="checkbox"/> Hazards and Hazardous Materials    |
| <input type="checkbox"/> Hydrology and Water Quality   | <input type="checkbox"/> Land Use and Planning              | <input type="checkbox"/> Mineral Resources                  |
| <input type="checkbox"/> Noise                         | <input type="checkbox"/> Population and Housing             | <input type="checkbox"/> Public Services                    |
| <input type="checkbox"/> Recreation                    | <input type="checkbox"/> Transportation                     | <input type="checkbox"/> Tribal Cultural Resources          |
| <input type="checkbox"/> Utilities and Service Systems | <input type="checkbox"/> Wildfire                           | <input type="checkbox"/> Mandatory Findings of Significance |

Determination (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD 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 will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

  
Signature

12-11-2019  
Date

## Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an Environmental Impact Report (EIR) is required.
4. “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from “Earlier Analyses,” as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
  - a. Earlier Analysis Used. Identify and state where they are available for review.
  - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
  - c. Mitigation Measures. For effects that are “Less Than Significant With Mitigation Measures Incorporated,” describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project’s environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
  - a. The significance criteria or threshold, if any, used to evaluate each question; and
  - b. The mitigation measure identified, if any, to reduce the impact to less than significance



### 3.1 Aesthetics

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>I. AESTHETICS</b> – Except as provided in Public Resources Code Section 21099, 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) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>

**a) Would the project have a substantial adverse effect on a scenic vista?**

**Less-Than-Significant Impact.** The Fullerton Plan (the City's General Plan) generally defines a scenic vista as "a view of undisturbed natural lands exhibiting a unique or unusual feature that comprises an important or dominant portion of the viewshed" (City of Fullerton 2012a). Additionally, the Fullerton Plan indicates, "scenic vistas may also be represented by a particular distant view that provides visual relief from less attractive views of nearby features. Other designated federal and state lands, as well as local open space or recreational areas, may also offer scenic vistas if they represent a valued aesthetic view within the surrounding landscape" (City of Fullerton 2012a). The northern portion of the City is dominated by gently rolling hills, which offer long-range views and broad vistas, and provide visual relief from the more densely developed areas located in the southern portion of the City. The Fullerton College campus is located in a densely developed suburban setting centrally located within the City.

Exhibit 10 of the Fullerton Plan identifies the location of scenic corridors within the City. Scenic corridors are primarily located in the northern portion of the City as many of these roads are afforded views of the local foothills and valleys, and more distant views to the mountains. The nearest designated scenic corridor is located at the intersection of Brea Boulevard and Harbor Boulevard, approximately 0.4 miles northwest of the project site (City of Fullerton 2012a). Views to Fullerton College from the corridor are screened by intervening development, terrain, and vegetation.

As there are no designated scenic vistas near the project site and project development on the Fullerton College campus would not be visible from the nearest City-designated scenic corridor, the proposed project would not have a substantial adverse effect on a scenic vista, and impacts would be less than significant.

**b) *Would the project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?***

**No Impact.** There are no state scenic highways within the City (City of Fullerton 2012a). According to the California Department of Transportation (Caltrans), the nearest officially designated state scenic highway is SR-91, from SR-55 to east of Anaheim city limit, and is located over 5 miles southeast of the project site at its closest point (Caltrans 2017). Due to distance and intervening development, development at Fullerton College is not visible from the designated scenic segment of SR-91. The nearest eligible state scenic highway is SR-57, from SR-90 north to the Los Angeles County line, and is located more than 2 miles northeast of the project site at its closest point (Caltrans 2017). As mentioned above, project site is not visible from the nearest locally designated scenic corridor in Fullerton, and there are no County of Orange (County)-designated scenic highways within the vicinity of the campus (County of Orange 2005). As such, the proposed project would result in no impact to scenic resources within a state scenic highway.

**c) *In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?***

**No Impact.** State CEQA Section 21071 defines an “urbanized area” as “(a) an incorporated city that meets either of the following criteria: (1) Has a population of at least 100,000 persons, or (2) Has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons.” According to the U.S. Census Bureau, the City has a population of 135,161 (U.S. Census Bureau 2018). Therefore, the project site is located in an urbanized area; a discussion of the project’s consistency with applicable zoning and other regulations governing scenic quality has been included below.

The proposed project includes replacing the existing 1,440-square-foot greenhouse facility with a 22-foot-tall, 2,880-square-foot Venlo-style greenhouse on the existing college campus. The proposed greenhouse structure would consist of a greenhouse divided by a partition wall; each side would be 30 by 48 feet. The entrances to each side would be provided from the east and west. The greenhouse would be constructed with pre-drilled galvanized steel poles, and 8mm twinwall polycarbonate opal for the partition wall, roof, and exterior walls (Figure 4). Additionally, the proposed project involves interior renovations to the restroom facilities, which would not be visible from public vantage points. Other exterior modifications would include improvements to the pathway from the restroom facilities to the proposed greenhouse structure (i.e., pavement to improve accessibility). Additionally, the proposed project would stripe parking spaces, inclusive of a handicap accessible van space and five passenger vehicle spaces, located on the western edge of the Horticulture Complex 1600.

The project site currently has a zoning designation of Public Land (P-L) (City of Fullerton 2017). Per Section 15.25.020 of the Fullerton Municipal Code, educational facilities are a permitted use in a P-L zone. Permitted uses in the P-L zone must comply with Municipal Code Section 15.50, Landscaping and Irrigation Requirements. Existing landscaping (trees and shrubs) would be protected in place, and no new

landscaping would be installed as part of the proposed project. Therefore, the proposed project would not conflict with the applicable zoning regulations set forth in Sections 15.25.020 or 15.50 of the Municipal Code. No impacts would occur related to consistency with applicable zoning or other regulations governing scenic quality.

**d) *Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?***

***Less-Than-Significant Impact.*** Existing sources of light and glare on the Fullerton College campus and in the surrounding area include sources common to an educational campus and adjacent commercial and residential land uses. Existing lighting is installed throughout the campus in public spaces, parking areas, along pedestrian paths and perimeter sidewalks, and at building entrances, including tall, green lampposts topped with decorative lamps and situated atop concrete pedestals, overhead lighting on internal roads, accent and sign lighting and pathway lighting that is relatively flush with the ground. In addition, light fixtures are installed on campus building exteriors and over covered walkways. Additional sources of on-campus lighting include parking lot and structure lighting, overhead lighting installed at the aquatic center and tennis courts, and lighting emanating from building interiors. There is an existing outdoor light source on the greenhouse building.

The use of reflective building materials is relatively uncommon on the Fullerton College campus and in the surrounding area. Buildings in the area are typically constructed of brick, stucco, or wood, and feature clay tile or wood shingle (or similar) roofs. As such, opportunities for noticeable glare during daytime hours are low.

The proposed project does not include the installation of any new sources exterior lighting. The proposed greenhouse structure would replace the existing greenhouse and would result in the same or similar visual setting as existing conditions. Due to intervening existing structures, trees, and vegetation, the proposed greenhouse would not be visible off site. As the project does not propose additional light sources and the proposed structure would be similar to existing conditions, the proposed greenhouse would not create any new sources of light or glare in the area. Further, proposed improvements to the restroom facility would be internal with the exception of pathway improvements. However, the pathway improvements would not include any new lighting. Therefore, the proposed project would not result in new sources of light or glare, and impacts would be less than significant.

## 3.2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>II. AGRICULTURE AND FORESTRY RESOURCES</b> – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. 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)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<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 or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) ***Would the project 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?***

**No Impact.** The proposed project would not convert farmland to nonagricultural use. The entire project site and project vicinity are designated as urban and built-up land, pursuant to the Farmland Mapping and Monitoring Program of the California Natural Resources Agency (DOC 2016a). Additionally, the City does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (collectively Important Farmland) (DOC 2016a). Therefore, no impacts associated with conversion of Important Farmland would occur.

**b) *Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?***

**No Impact.** The Williamson Act, also known as the California Land Conversion Act of 1969 (California Government Code, Section 51200 et seq.), preserves agricultural and open space lands from the conversion to urban land uses by establishing a contract between local governments and private landowners to voluntarily restrict their land holdings to agricultural or open space use.

According to the California Department of Conservation's Williamson Act Parcel map for the State of California, the proposed project site is not located on or adjacent to any lands under Williamson Act contract. The State of California Williamson Act 2016 Map designates the project site and surrounding land as Urban and Built-Up Land (DOC 2016b). Furthermore, the project site and surrounding area are not zoned for agricultural uses. The proposed project is located on the Fullerton College campus and has a zoning designation of P-L (City of Fullerton 2017). As such, implementation of the proposed project would not conflict with existing zoning for agricultural use or land under a Williamson Act contract. Therefore, no impacts associated with agricultural zoning or Williamson Act contracts would occur.

**c) *Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?***

**No Impact.** The project site is located within a highly developed part of the City. According to the City's Zoning Map, the project site is not located on or adjacent to forestland, timberland, or timberland zoned Timberland Production (City of Fullerton 2017). Therefore, no impacts associated with forestland or timberland would occur.

**d) *Would the project result in the loss of forest land or conversion of forest land to non-forest use?***

**No Impact.** The project site is located in a highly urbanized area. The project site is not located on or adjacent to forestland. No private timberlands or public lands with forests are located in the City. Therefore, no impact associated with the loss or conversion of forestland would occur.

**e) *Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?***

**No Impact.** The project site is not located on or adjacent to any parcels identified as Important Farmland or forestland. In addition, the proposed project would not involve changes to the existing environment that would result in the indirect conversion of Important Farmland or forestland located away from the proposed project site. Therefore, no impacts associated with the conversion of Farmland or forestland would occur.

### 3.3 Air Quality

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>III. AIR QUALITY</b> – Where available, the significance criteria established by the applicable air quality management district 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) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**a) Would the project conflict with or obstruct implementation of the applicable air quality plan?**

**Less-Than-Significant Impact.** The project site is located within the South Coast Air Basin (SCAB), which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, as well as the entirety of Orange County, and is within the jurisdictional boundaries of South Coast Air Quality Management District (SCAQMD).

The SCAQMD administers the Air Quality Management Plan (AQMP) for the SCAB, which is a comprehensive document outlining an air pollution control program for attaining all California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). The most recent adopted AQMP is the 2016 AQMP (SCAQMD 2017), which was adopted by the SCAQMD Governing Board in March 2017. The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies while seeking to achieve multiple goals in partnership with other entities promoting reductions in greenhouse gases (GHGs) and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017).

The purpose of a consistency finding is to determine if a project is inconsistent with the assumptions and objectives of the regional air quality plans and, thus, if it would interfere with the region's ability to comply with federal and state air quality standards. The SCAQMD has established the following criteria for determining consistency with the currently applicable AQMP in Chapter 12, Sections 12.2 and 12.3, in the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993):

- Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.

- Whether the project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

To address the first criterion regarding the proposed project's potential to result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP, project-generated criteria air pollutant emissions were estimated and analyzed for significance and are addressed under Section 3.3(b). Detailed results of this analysis are included in Appendix A. As presented in Section 3.3(b), project construction would not generate criteria air pollutant emissions that would exceed the SCAQMD thresholds, and the proposed project is anticipated to generate minimal operational criteria air pollutant emissions.

The second criterion regarding the proposed project's potential to exceed the assumptions in the AQMP or increments based on the year of project buildout and phase is primarily assessed by determining consistency between the project's land use designations and potential to generate population growth. In general, projects are considered consistent with, and would not conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook). The SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the Southern California Association of Governments (SCAG) for its Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) (SCAG 2016), which is based on general plans for cities and counties in the SCAB, for the development of the AQMP emissions inventory (SCAQMD 2017).<sup>1</sup> The SCAG 2016 RTP/SCS, and associated Regional Growth Forecast, are generally consistent with the local plans; therefore, the 2016 AQMP is generally consistent with local government plans.

The project site is zoned for P-L, and since the project would not change the site's zoning designations or land use designations, the proposed project would be consistent with the existing General Plan and, in turn, the assumptions utilized in SCAG's RTP/SCS and SCAQMD's AQMP. Additionally, as discussed in Chapter 2 of this IS/MND, the proposed project would involve the construction and replacement of the existing greenhouse facility and renovation of the existing restroom facilities. Given the nature of the activity uses associated with the project are consistent with the existing use, the proposed project would not change the population, housing, or employment forecast considered by SCAG and SCAQMD in their regional planning documents. Therefore, the proposed project would not generate growth or change or affect the existing zoning or land use designations in project area. Accordingly, impacts relating to the proposed project's potential to conflict with or obstruct implementation of the 2016 AQMP would be less than significant.

**b) *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?***

***Less-Than-Significant Impact.*** Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and the SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level

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<sup>1</sup> Information necessary to produce the emission inventory for the SCAB is obtained from the SCAQMD and other governmental agencies, including the California Air Resources Board (CARB), the California Department of Transportation, and SCAG. Each of these agencies is responsible for collecting data (e.g., industry growth factors, socioeconomic projections, travel activity levels, emission factors, emission speciation profile, and emissions) and developing methodologies (e.g., model and demographic forecast improvements) required to generate a comprehensive emissions inventory. SCAG incorporates these data into its Travel Demand Model for estimating/projecting vehicle miles traveled (VMT) and driving speeds. SCAG's socioeconomic and transportation activities projections in their 2016 RTP/SCS are integrated in the 2016 AQMP (SCAQMD 2017).

thresholds of significance for criteria pollutants are used in the determination of whether a project's individual emissions would have a cumulatively considerable contribution on air quality. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD 2003).

A quantitative analysis was conducted to determine whether proposed construction activities would result in a cumulatively considerable net increase in emissions of criteria air pollutants for which the SCAB is designated as nonattainment under the NAAQS or CAAQS. Criteria air pollutants include ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM<sub>10</sub>), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns (PM<sub>2.5</sub>), and lead. Pollutants that are evaluated herein include volatile organic compounds (VOCs) and oxides of nitrogen (NO<sub>x</sub>), which are important because they are precursors to O<sub>3</sub>, as well as CO, sulfur oxides (SO<sub>x</sub>), PM<sub>10</sub>, and PM<sub>2.5</sub>.

Regarding NAAQS and CAAQS attainment status,<sup>2</sup> the SCAB is designated as a nonattainment area for national and California O<sub>3</sub> and PM<sub>2.5</sub> standards (CARB 2017a; EPA 2017a). The SCAB is designated as a nonattainment area for California PM<sub>10</sub> standards; however, it is designated as an attainment area for national PM<sub>10</sub> standards. The SCAB nonattainment status of O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> standards is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. The SCAB is designated as an attainment area for national and California NO<sub>2</sub>, CO, and SO<sub>2</sub> standards. Although the SCAB has been designated as partial nonattainment (Los Angeles County) for the federal rolling 3-month average lead standard, it is designated attainment for the state lead standard.<sup>3</sup>

Appendix G of the CEQA Guidelines indicates that, where available, the significance criteria established by the applicable air district may be relied upon to determine whether a project would have a significant impact on air quality. The SCAQMD has established Air Quality Significance Thresholds, as revised in March 2015, which set forth quantitative emissions significance thresholds below which a project would not have a significant impact on ambient air quality (SCAQMD 2015). The quantitative air quality analysis provided herein applies the SCAQMD thresholds to determine the potential for the proposed project to result in a significant impact under CEQA. The SCAQMD mass daily construction thresholds are as follows: 75 pounds per day for VOC, 100 pounds per day for NO<sub>x</sub>, 550 pounds per day for CO, 150 pounds per day for SO<sub>x</sub>, 150 pounds per day for PM<sub>10</sub>, and 55 pounds per day for PM<sub>2.5</sub>.

The following discussion quantitatively evaluates project-generated construction impacts and qualitatively evaluates operational impacts that would result from implementation of the proposed project.

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<sup>2</sup> An area is designated as in attainment when it is in compliance with the NAAQS and/or the CAAQS. The NAAQS and CAAQS are set by the Environmental Protection Agency and CARB, respectively, for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare. "Attainment" areas meet the standards, "attainment/maintenance" areas achieved the standards after a nonattainment designation, and "nonattainment" areas do not meet the standards.

<sup>3</sup> Re-designation of the lead NAAQS designation to attainment for the Los Angeles County portion of the SCAB is expected based on current monitoring data. The phase out of leaded gasoline started in 1976. Since gasoline no longer contains lead, the proposed project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.



### Construction Emissions

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment and soil disturbance) and off-site sources (i.e., on-road haul trucks, delivery trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions for construction of the proposed project. CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant emissions associated with construction activities from a variety of land use projects such as residential, commercial, and industrial facilities. CalEEMod input parameters, including the project size, and construction schedule were based on information provided by the District and default model assumptions when project-specific data was not available such as the number of worker/delivery/haul trips, and anticipated construction equipment utilization.

For the purpose of conservatively estimating project emissions, it is assumed that construction of the proposed project would start in June 2020 and would occur over several months. The construction phasing schedule and duration, vehicle trip assumptions, and construction equipment mix used for estimating the project-generated emissions are shown in Table 3.3-1.

**Table 3.3-1. Construction Scenario Assumptions**

Construction Phase	Start Date	Finish Date	One-Way Vehicle Trips			Equipment		
			Average Daily Workers	Average Daily Vendor	Total Haul Trucks	Type	Quantity	Usage Hours
Demolition	06/01/2020	06/05/2020	6	0	8	Concrete/ industrial saws	1	8
Grading/ site work	06/06/2020	06/09/2020	4	0	0	Skid steer loaders	1	8
Building construction	06/10/2020	08/04/2020	8	2	0	Cement and mortar mixers	1	8
						Forklifts	1	8
						Welders	2	8
Finish work	08/05/2020	08/11/2020	2	0	0	Air compressors	1	8

**Source:** See Appendix A for details.

Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of VOCs, NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub>. PM<sub>10</sub> and PM<sub>2.5</sub> emissions would also be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. The proposed project would be required to comply with SCAQMD Rule 403 to control dust emissions during any dust-generating activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active grading areas two times per day, with additional watering depending on weather conditions.

Estimated maximum daily construction criteria air pollutant emissions from all on-site and off-site emission sources is provided in Table 3.3-2.

**Table 3.3-2. Estimated Maximum Daily Construction Emissions**

Year	VOC	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
	<i>Pounds per Day</i>					
2020	2.25	5.04	5.40	<0.01 <sup>a</sup>	0.84	0.47
<b>SCAQMD threshold</b>	<b>75</b>	<b>100</b>	<b>550</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Threshold exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: SCAQMD 2015.

Notes: VOC = volatile organic compound; NO<sub>x</sub> = oxides of nitrogen; CO = carbon monoxide; SO<sub>x</sub> = sulfur oxides; PM<sub>10</sub> = coarse particulate matter; PM<sub>2.5</sub> = fine particulate matter; SCAQMD = South Coast Air Quality Management District.

See Appendix A for detailed results.

<sup>a</sup> <0.01 = value less than reported 0.01 metric tons per year.

As shown in Table 3.3-2, daily construction emissions would not exceed the SCAQMD significance thresholds for VOC, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub> during project construction.

As discussed previously, the SCAB has been designated as a federal nonattainment area for O<sub>3</sub> and PM<sub>2.5</sub> and a state nonattainment area for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. Proposed construction activities of the proposed project would generate VOC and NO<sub>x</sub> emissions (which are precursors to O<sub>3</sub>) and emissions of PM<sub>10</sub> and PM<sub>2.5</sub>. However, as indicated in Table 3.3-2, project-generated construction emissions would not exceed the SCAQMD emission-based significance thresholds for VOC, NO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub>, and therefore, the proposed project would not cause a cumulatively significant impact.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. The Program EIR identified activities within the Horticulture Complex to occur during Phase 2 (2019–2022) for implementation of the FMP (District 2017). Emissions estimated for projects to occur in 2020 during Phase 2 of the FMP were below the SCAQMD threshold, and when combined with the proposed project would not exceed SCAQMD threshold. However, construction schedules for potential future projects is currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be considered speculative.<sup>4</sup> Nonetheless, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM<sub>10</sub> and PM<sub>2.5</sub> emissions would also be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD. Based on the previous considerations, the proposed project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants, and impacts would be less than significant.

### Operational Emissions

Once project construction is complete, operation of the new greenhouse and restroom facilities would be comparable to existing conditions and would not generate any new sources of criteria air pollutant emissions. Therefore, impacts related to operational emissions would be less than significant.

<sup>4</sup> The CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This discussion is nonetheless provided in an effort to show good-faith analysis and comply with CEQA's information disclosure requirements.

c) **Would the project expose sensitive receptors to substantial pollutant concentrations?**

**Less-Than-Significant Impact.** Localized project impacts associated with construction criteria air pollutants emissions are assessed as follows.

**Sensitive Receptors**

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). The closest sensitive receptor land uses are single-family residences approximately 180 feet north of the project site.

**Localized Significance Thresholds**

The SCAQMD recommends a localized significance threshold (LST) analysis to evaluate localized air quality impacts to sensitive receptors in the immediate vicinity of the project site as a result of construction activities. The impacts were analyzed using methods consistent with those in the SCAQMD's Final Localized Significance Threshold Methodology (SCAQMD 2009). The proposed project is located in Source Receptor Area 16 (North Orange County). Proposed project's construction activities would occur over a 0.07-acre area; therefore, for the purposes of the LST analysis, emissions thresholds based on a 1-acre site were utilized. This is a conservative approach, as LSTs increase with the size of project site. As mentioned previously, the closest sensitive receptors are residences located north of the project site. A receptor distance of 50 meters (164 feet), available in the SCAQMD LST Methodology, was assumed for this analysis.

Project construction activities would result in temporary sources of on-site criteria air pollutant emissions associated with construction equipment exhaust and dust-generating activities. The maximum daily on-site construction emissions generated during construction of the proposed project is presented in Table 3.3-3, and compared to the SCAQMD localized significance criteria for Source Receptor Area 16 to determine whether project-generated on-site construction emissions would result in potential LST impacts.

**Table 3.3-3. Construction Localized Significance Thresholds Analysis**

	NO <sub>2</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>
Year	<i>Pounds per Day (on site)</i>			
2020	0.08	1.06	0.80	0.46
SCAQMD LST criteria	104	685	10	4
Threshold exceeded?	No	No	No	No

Source: SCAQMD 2009.

**Notes:** NO<sub>2</sub> = nitrogen dioxide; CO = carbon monoxide; PM<sub>10</sub> = particulate matter; PM<sub>2.5</sub> = fine particulate matter; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold.

See Appendix A for detailed results.

LSTs are shown for a 1-acre project site corresponding to a distance to a sensitive receptor of 50 meters.

As shown in Table 3.3-3, proposed construction activities would not generate emissions in excess of site-specific LSTs; therefore, localized project construction impacts would be less than significant.

### CO Hotspots

Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed federal and/or state standards for CO are termed CO “hotspots.” CO transport is extremely limited, because CO disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations near a congested roadway or intersection may reach unhealthy levels, affecting sensitive receptors. Typically, high CO concentrations are associated with severely congested intersections. Projects contributing to adverse traffic impacts may result in the formation of a CO hotspot. Additional analysis of CO hotspot impacts would be conducted if a project would result in a significant impact or contribute to an adverse traffic impact at a signalized intersection that would potentially subject sensitive receptors to CO hotspots. During construction of the proposed project, construction traffic would affect the intersections near the project site. However, the proposed project would be temporary and would not be a source of daily, long-term mobile-source emissions. In addition, due to continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing. Therefore, the proposed project would not generate additional traffic volumes, and impacts related to CO hot spots would be less than significant.

### Toxic Air Contaminants

Toxic air contaminants (TACs) are defined as substances that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. As discussed under the LST analysis, the nearest sensitive receptors are located approximately 180 feet to the north of the project site.

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SCAQMD recommends an incremental cancer risk threshold of 10 in 1 million. “Incremental cancer risk” is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer based on the use of standard Office of Environmental Health Hazard Assessment risk-assessment methodology (OEHHA 2015). In addition, some TACs have non-carcinogenic effects. The SCAQMD recommends a Hazard Index of 1 or more for acute (short-term) and chronic (long-term) non-carcinogenic effects.<sup>5</sup> TACs that would potentially be emitted during construction activities associated with the proposed project would be diesel particulate matter.

Diesel particulate matter emissions would be emitted from heavy equipment operations and heavy-duty trucks. Heavy-duty construction equipment is subject to a California Air Resources Board (CARB) Airborne Toxics Control Measure for in-use diesel construction equipment to reduce diesel particulate emissions. As described for the LST analysis, PM<sub>10</sub> and PM<sub>2.5</sub> (representative of diesel particulate matter) exposure would be minimal. According to the Office of Environmental Health Hazard Assessment, health risk assessments (which determine the exposure of sensitive receptors to toxic emissions) should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should also be limited to the period/duration of activities associated with the project. The duration of the proposed construction activities would constitute a small percentage of the total 30-year exposure period. Construction of the proposed project is expected to begin in June 2020 and last approximately 3 months, after which construction-related TAC emissions would cease. Due to this relatively short period of exposure and minimal particulate emissions on site, TACs generated during construction would not be expected to result in concentrations causing significant health risks.

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<sup>5</sup> Non-cancer adverse health risks are measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentrations of the various non-carcinogens from the project to published reference exposure levels that can cause adverse health effects.

### Health Effects of Criteria Air Pollutants

Construction emissions of the proposed project would not exceed the SCAQMD thresholds for any criteria air pollutants, including VOC, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>.

Health effects associated with O<sub>3</sub> include respiratory symptoms, worsening of lung disease leading to premature death, and damage to lung tissue (CARB 2019). VOCs and NO<sub>x</sub> are precursors to O<sub>3</sub>, for which the SCAB is designated as nonattainment with respect to the NAAQS and CAAQS. The contribution of VOCs and NO<sub>x</sub> to regional ambient O<sub>3</sub> concentrations is the result of complex photochemistry. The increases in O<sub>3</sub> concentrations in the SCAB due to O<sub>3</sub> precursor emissions tend to be found downwind of the source location because of the time required for the photochemical reactions to occur. Further, the potential for exacerbating excessive O<sub>3</sub> concentrations would also depend on the time of year that the VOC emissions would occur, because exceedances of the O<sub>3</sub> NAAQS and CAAQS tend to occur between April and October when solar radiation is highest. Due to the lack of quantitative methods to assess this complex photochemistry, the holistic effect of a single project's emissions of O<sub>3</sub> precursors is speculative. That being said, because the proposed project would not exceed the SCAQMD thresholds, the proposed project would not contribute to health effects associated with O<sub>3</sub>.

Health effects associated with NO<sub>x</sub> include lung irritation and enhanced allergic responses (CARB 2019). Because project-related NO<sub>x</sub> emissions would not exceed the SCAQMD mass daily thresholds, and because the SCAB is a designated attainment area for NO<sub>2</sub> and the existing NO<sub>2</sub> concentrations in the area are well below the NAAQS and CAAQS standards, it is not anticipated that the proposed project would cause an exceedance of the NAAQS and CAAQS for NO<sub>2</sub> or result in potential health effects associated with NO<sub>2</sub> and NO<sub>x</sub>.

Health effects associated with CO include chest pain in patients with heart disease, headache, light-headedness, and reduced mental alertness (CARB 2019). CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots was discussed previously and determined to be less than significant. Thus, the project's CO emissions would not contribute to significant health effects associated with CO.

Health effects associated with PM<sub>10</sub> include premature death and hospitalization, primarily for worsening of respiratory disease (CARB 2019). Construction of the proposed project would not exceed thresholds for PM<sub>10</sub> or PM<sub>2.5</sub>, would not contribute to exceedances of the NAAQS and CAAQS for particulate matter, and would not obstruct the SCAB from coming into attainment for these pollutants. The proposed project would also not result in substantial diesel particulate matter emissions during construction. Additionally, the proposed project would be required to comply with SCAQMD Rule 403, which limits the amount of fugitive dust generated during construction. However, due to the minimal contribution of particulate matter during construction, the proposed project is not anticipated to result in health effects associated with PM<sub>10</sub> or PM<sub>2.5</sub>.

In summary, construction and operation of the proposed project would not result in exceedances of the SCAQMD significance thresholds for criteria pollutants, and potential health effects associated with criteria air pollutants would be less than significant.

- d) ***Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?***

**Less-Than-Significant Impact.** The occurrence and severity of potential odor impacts depend on numerous factors. The nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying, cause distress among the public, and generate citizen complaints.

During project construction, exhaust from equipment may produce discernible odors typical of most construction sites. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment. However, such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Notably, construction activities would occur over a short duration and would not result in permanent impacts to surrounding land uses. Regarding operations, land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (SCAQMD 1993). The proposed project would not create any new sources of odor during operation of the greenhouse and restroom facilities. Therefore, the proposed project would have an odor impact that is less than significant.

### 3.4 Biological Resources

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>IV. BIOLOGICAL RESOURCES – Would the project:</b>				
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 Game 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 Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<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 checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

**No Impact.** The project site is located within Horticulture Complex 1600 on the northern boundary of Fullerton College campus. Surrounding land uses include public land (Fullerton College) to the south and residential uses to the north, east, and west of the project site. As such, no native habitat is located on the project site or in the immediately surrounding area. On-site plant species are limited to non-native, ornamental species. These non-native, ornamental plant species form a non-cohesive plant community that is not known to support any candidate, sensitive, or special-status plant species. Based on the developed nature of the project site and surrounding area, wildlife species that could occur on site include common species typically found in urbanized settings such as house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura*), and western fence lizard (*Sceloporus occidentalis*). Based on specific habitat requirements, none of these, or any other wildlife species that can reasonably be expected to occur on the project site, are candidate, sensitive, or special-status wildlife species. Ornamental landscape trees that are currently located on the project site would not be removed. Because of the highly disturbed nature of the project site and the residential activity around the site, it is unlikely that the existing trees would provide desirable nesting opportunities for bird/raptor species, especially considering that more suitable nesting options likely occur within the broader project area. Therefore, no impacts associated with candidate, sensitive, or special-status species would occur.

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

**Less-Than-Significant Impact.** As previously mentioned, land uses surrounding the project site are public land (Fullerton College) and residential uses. Additionally, the proposed project involves construction of a new greenhouse structure to replace the existing one and improvements to the existing restroom facilities. As such, the project site consists primarily of developed land and ornamental plantings. These are not natural vegetation communities considered sensitive by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service. Additionally, the project site is not located in riparian habitat or a sensitive natural community, and the proposed project would not have an adverse effect on these habitats. Therefore, impacts associated with riparian or sensitive vegetation communities would be less than significant.

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

**No Impact.** No federally defined waters of the United States or state occur within the project site. This includes the absence of federally defined wetlands and other waters (e.g., drainages) and state-defined waters (e.g., streams and riparian extent) (USFWS 2019). The proposed project would be subject to typical restrictions and requirements that address erosion and runoff (e.g., best management practices [BMPs]), including those of the Clean Water Act and National Pollutant Discharge Elimination System permit. In addition, all construction activities would be limited to developed and disturbed land. Therefore, no impacts to jurisdictional waters or wetlands would occur.

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

**Less-Than-Significant Impact.** Wildlife corridors are linear, connected areas of natural open space that provide avenues for migration of animals. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as stepping stones for wildlife dispersal.

Given the extent of existing development north, east, south, and west of the project site and the Fullerton College campus' location between several busy vehicle thoroughfares, the proposed project site is expected to support limited wildlife movement and lacks intact connectivity to other major habitat reserve areas. Therefore, impacts associated with wildlife movement or wildlife corridors would be less than significant.

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

**No Impact.** The City Municipal Code Chapter 9.06 Community Forestry states that no person shall injure, prune, or remove any public tree growing within the City public right-of-way (i.e., parkways, parks, and areas around public buildings) without a permit from the Director of Maintenance Services. Furthermore, it is against the code to prune or remove a landmark tree. Landmark trees are defined as any tree found to be of high value because of its species, size, age, or historic associations, as designated by City Council. As observed in the site plan for the proposed project (Figure 3), no trees would be removed during construction. As such, implementation of the proposed project would not conflict with local policies. Therefore, no impacts associated with local policies or ordinances protecting biological resources would occur.

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

**No Impact.** Exhibit 25 of the Fullerton Plan does not identify habitat conservation areas within the vicinity of the project site (City of Fullerton 2012a). Additionally, the project site is not identified on a regional or state conservation plan. Therefore, no impacts associated with an adopted conservation plan would occur.



### 3.5 Cultural Resources

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>V. CULTURAL RESOURCES</b> – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?**

**No Impact.** As defined by the CEQA Guidelines (14 CCR 15000 et seq.), a “historical resource” is considered to be a resource that is listed in or eligible for listing in the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR), has been identified as significant in a historical resource survey, or is listed on a local register of historical resources.

The criteria for listing resources in the CRHR were developed to be in accordance with previously established criteria developed for listing in the NRHP. Thus, the criteria listed as follows is expressed in accordance with the NRHP criteria. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains “substantial integrity” and (ii) meets at least one of the following criteria:

- (1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
- (2) Is associated with the lives of persons important in our past.
- (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- (4) Has yielded, or may be likely to yield, information important in prehistory or history.

Under CEQA, a project may have a significant effect on the environment if it may cause “a substantial adverse change in the significance of an historical resource” (PRC Section 21084.1; 14 CCR 15064.5[b]). If a site is listed or eligible for listing in the CRHR, included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1[q]), it is a historical resource and is presumed to be historically or culturally significant for the purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5[a]).

For a building to be considered historic, it typically must be at least 50 years old so sufficient time has passed to determine whether the events or characteristics of the building will have a contribution to history (OHP 2015). According to the Program EIR, all buildings and structures that were constructed prior to 1972 were photographed, researched, and evaluated in consideration of the CRHR designation criteria and integrity requirements and in consideration of potential impacts to historical resources under CEQA. As a result, the Horticulture Complex was found not eligible under NRHP, CRHR, or City designation criteria (District 2017). Therefore, the proposed project would not result in a significant impact to historic resources as defined under CEQA. No impacts associated to a historical resource would occur.

**b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?***

***Less-Than-Significant Impact.*** The proposed project involves the replacement of the existing greenhouse with a new Venlo-style greenhouse, improvements to the existing restroom facilities to meet current ADA code requirements, upgrading accessible pathways, and striping parking spaces within the Horticulture Complex 1600. Minimal grading and earthwork is anticipated as part of the replacement of the existing greenhouses and construction of accessible pathways. This grading would occur within the upper 1–2 feet of the project site, within soils already disturbed by the existing on-site development. Due to the heavy disturbance that has occurred on the project site as a result of previous development activities, it is unlikely that grading activities would encounter intact archaeological deposits. Additionally, no grading or earthwork is anticipated as part of the restroom improvements or parking striping. Therefore, impacts to archaeological resources would be less than significant.

**c) *Would the project disturb any human remains, including those interred outside of dedicated cemeteries?***

***Less-Than-Significant Impact.*** Since the project site has been previously disturbed, ground-disturbing activities associated with demolition of the proposed structures are unlikely to uncover previously unknown archaeological resources. However, if human skeletal remains are discovered during ground-disturbing activities, California Health and Safety Code Section 7050.5 states that the County Coroner must be immediately notified of the discovery. No further disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains can occur until the County Coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she must notify the Native American Heritage Commission in Sacramento within 24 hours. In accordance with PRC Section 5097.98, the Native American Heritage Commission must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The most likely descendant must complete his or her inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition for the human remains. Therefore, impacts associated with the discovery of human remains would be less than significant.

## 3.6 Energy

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>VI. Energy</b> – Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) *Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

**Less-Than-Significant Impact.** The service providers; supply sources; and estimated consumption for electricity, natural gas, and petroleum is discussed as follows.

### Energy Overview

#### Electricity

Southern California Edison (SCE) is the utility provider within the project area. SCE provides electric services to 15 million customers, located within a 50,000-square-mile area in central, coastal, and Southern California. According to SCE, customers consumed approximately 84 billion kilowatt-hours of electricity in 2017 (CEC 2018a). SCE receives electric power from a variety of sources. According to the SCE Sustainability Report, 32% of SCE's power came from renewable energy sources in 2017, including biomass/waste, geothermal, hydroelectric, solar, and wind sources (SCE 2018). Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita has remained stable for more than 30 years, while the national average has steadily increased (CEC 2015).

#### Natural Gas

Southern California Gas serves the proposed project area. Southern California Gas serves 21.6 million customers in a 20,000-square-mile service area that includes over 500 communities (SoCalGas 2018). In 2017 (the most recent year for which data is available), Southern California Gas delivered 5,142 million therms of natural gas, with the majority going to residential uses (CEC 2018b). Demand for natural gas can vary depending on factors such as weather, price of electricity, the health of the economy, environmental regulations, energy-efficiency programs, and the availability of alternative renewable energy sources. Natural gas is available from a variety of in-state and out-of-state sources and is provided throughout the state in response to market supply and demand.

### ***Petroleum***

Transportation accounts for the majority of California's total energy consumption (EIA 2019). According to the Energy Information Association, California used approximately 672 million barrels of petroleum in 2016 (EIA 2018). This equates to a daily use of approximately 1.8 million barrels of petroleum. There are 42 U.S. gallons in a barrel, so California consumes approximately 77 million gallons of petroleum per day, adding up to an annual consumption of 28 billion gallons of petroleum. However, technological advances, market trends, consumer behavior, and government policies could result in significant changes in fuel consumption by type and in total. At the federal and state levels, various policies, rules, and regulations have been enacted to improve vehicle fuel efficiency, promote the development and use of alternative fuels, reduce transportation-source air pollutants and GHG emissions, and reduce vehicle miles traveled (VMT).

### **Construction Energy Use**

#### ***Electricity***

Temporary electric power for as-necessary lighting and electronic equipment would be provided by SCE. The amount of electricity used during construction would be minimal, because typical demand would stem from electrically powered hand tools. The electricity used for construction activities would be temporary and minimal; therefore, proposed project construction would not result in wasteful, inefficient, or unnecessary consumption of electricity. Impacts would be less than significant.

#### ***Natural Gas***

Natural gas is not anticipated to be required during construction of the proposed project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed under the following Petroleum section. Any minor amounts of natural gas that may be consumed as a result of proposed project construction would be temporary and negligible and would not have an adverse effect; therefore, proposed project construction would not result in wasteful, inefficient, or unnecessary consumption of natural gas. Impacts would be less than significant.

### ***Petroleum***

Petroleum would be consumed throughout construction. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction. Transportation of construction materials and construction workers would also result in petroleum consumption. Heavy-duty construction equipment, vendor trucks, and haul trucks would use diesel fuel. Construction workers would likely travel to and from the project area in gasoline-powered vehicles. Construction of the proposed project is expected to begin in June 2020 and last approximately 3 months. Once construction activities cease, petroleum use from off-road equipment and transportation vehicles would end. Because of the short-term nature of construction and relevantly small scale of the project, impacts would be less than significant.

### **Operational Energy Use**

Once operational, the proposed project would result in energy use (natural gas and electricity); however, since the proposed project consists of the replacement of an existing greenhouse structure, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces, energy usage is expected to be similar to the existing conditions. Therefore, the operational energy use associated with the proposed project would be less than significant.

**b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?**

**Less-Than-Significant Impact.** The proposed project would follow applicable energy standards and regulations during the construction phases. Worker vehicles would meet the applicable standards of Assembly Bill (AB) 1493 (vehicles manufactured 2009 or later). Regarding operations, Title 24 of the California Code of Regulations contains energy efficiency standards for residential and non-residential buildings based on a state mandate to reduce California's energy demand. Specifically, Title 24 addresses a number of energy efficiency measures that impact energy used for lighting, water heating, heating, and air conditioning, including the energy impact of the building envelope such as windows, doors, skylights, wall/floor/ceiling assemblies, attics, and roofs. Part 6 of Title 24 specifically establishes energy efficiency standards for residential and non-residential buildings constructed in the State of California in order to reduce energy demand and consumption. The proposed project would comply with Title 24, Part 6, per state regulations. As such, impacts related to the proposed project's potential to conflict with plans for renewable energy and energy efficiency would be less than significant.

### 3.7 Geology and Soils

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>VII. GEOLOGY AND SOILS – Would the project:</b>				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<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 checked="" type="checkbox"/>	<input 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), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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"/>
f) 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"/>

a) **Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:**

i) **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

**Less-Than Significant Impact.** The proposed project site is located in the La Habra Quadrangle. No active fault lies directly underneath the project site; however, the Whittier Fault Zone is located 4.5 miles northeast of the proposed project site (DOC 2010). The closest fault zone delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map is the La Habra Fault Zone, located approximately 3 miles northwest and 5 miles directly north of the project site (CGS 2019). The closest earthquake faults not identified on the Alquist-Priolo Earthquake Fault Zoning Map are the Norwalk Fault and Puente Hills Fault, which transverse through portions of the City. Additionally, the Whittier-Elsinore Fault is located 1.6 miles northeast of the City, and the Newport Inglewood Fault is located 9.8 miles southwest of the City (City of Fullerton 2012b). However, due to the distance between the nearest state-designated Earthquake Fault Zone and the project site, the proposed project would be unlikely to cause substantial adverse effects involving the rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map. Because the project site is not located within an active fault zone, the likelihood of fault rupture to occur within the project site is low. Additionally, the proposed project would not exacerbate the potential for fault rupture to occur and, thus, would not directly or indirectly cause substantial adverse effects due to fault rupture. Therefore, impacts associated with fault rupture would be less than significant.

ii) **Strong seismic ground shaking?**

**Less-Than-Significant Impact.** Like most of Southern California, the project site is located within a seismically active area. Numerous faults considered active or potentially active have been mapped in Southern California, including in the vicinity of the City. Thus, the proposed project's future visitors could be exposed to strong seismic ground shaking in the event of an earthquake. The Norwalk Fault and Puente Hills Fault, which traverse portions of Fullerton, have the greatest potential of causing ground shaking in the City. Additionally, the Whittier-Elsinore Fault, located 1.6 miles northeast of the City, and Newport Inglewood Fault, located 9.8 miles southwest of the City,

could result in significant ground shaking in the City (City of Fullerton 2012b). According to the City's Local Hazard Mitigation Plan, the City is located in a "High Seismic Zone." As per the American Society of Civil Engineers 7-05 Standard and the Uniform Building Code, stronger construction standards for buildings in "High Seismic Zones" have been adopted in the attempt to reduce impacts related from seismic activity (City of Fullerton 2010). All improvements would be designed, fabricated, and constructed in accordance with applicable seismic standards and regulations, including the Division of the State Architect requirements and the Uniform Building Code. These codes impose design standards and requirements that seek to minimize the damage associated with seismic events. With adherence to applicable standards and regulations, the proposed project would not expose people or structures to substantial adverse risks associated with seismic ground shaking. Therefore, impacts would be less than significant.

**iii) Seismic-related ground failure, including liquefaction?**

**Less-Than-Significant Impact.** Soil liquefaction is a seismically induced form of ground failure that has been a major cause of earthquake damage in Southern California. Liquefaction is a process by which water-saturated granular soils transform from a solid to a liquid state because of a sudden shock or strain such as an earthquake. According to the California Geological Survey, the City is primarily susceptible to liquefaction within the southwestern portions; however, the project site does not fall within a liquefaction zone (CGS 2019). Additionally, project design and construction would conform to the Division of the State Architect requirements and the Uniform Building Code, which would abate any effects of unanticipated seismic-related ground failure and liquefaction. As such, the proposed project would not expose people or structures to substantial adverse risks associated with seismic-related ground failure or liquefaction. Therefore, impacts would be less than significant.

**iv) Landslides?**

**Less-Than-Significant Impact.** Landslides often occur during or after strong earthquakes. According to Exhibit 27 of the City's Fullerton Plan, the project site is not identified as susceptible to landslides (City of Fullerton 2012a). Additionally, the project site is relatively flat and lacks any hillsides or topographic features susceptible to landslides. Due to these site conditions, the proposed project would not expose people or structures to substantial adverse risks associated with landslides. Thus, impacts associated with landslides would be less than significant.

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

**Less-Than-Significant Impact.** The proposed project would involve the installation of a new greenhouse facility to replace the existing one, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces. Construction activities associated with the proposed project would result in temporary disturbance of soils. However, project construction would be subject to erosion BMPs to reduce the potential for soil erosion or loss of topsoil. Upon completion of construction, the project site would return to existing conditions. As such, the potential for substantial soil erosion or significant loss of topsoil would be relatively low. Therefore, impacts associated with soil erosion and loss of topsoil would be less than significant.

- c) ***Would the project 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?***

***Less-Than-Significant Impact.*** According to the U.S. Department of Agriculture soil survey, 100% of the site is underlain by Xerorthents loamy cut and fill areas (USDA 2019). The soils found on site are generally characterized as having a low to moderate shrink/swell potential and a moderate to high rate of infiltration. Xerorthents have a high surface runoff potential (USDA 2019). However, it should be noted that surface soils in the City may no longer reflect the natural soil associations and characteristics identified previously since topsoil in the City has been predominantly developed. As previously mentioned in Section 3.7(a)(iii), the project site is not located within a liquefaction zone. Furthermore, as stated in Section 3.7(a)(iv), the project site is relatively flat and lacks any hillsides or topographic features susceptible to landslides. Therefore, impacts resulting in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse would be less than significant.

- d) ***Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?***

***Less-Than-Significant Impact.*** Expansive soils are characterized by their potential shrink/swell behavior. Shrink/swell is the change in volume (contraction and expansion) that occurs in certain fine-grained clay sediments from the cycle of wetting and drying. Clay minerals are known to expand with changes in moisture content. The higher the percentage of expansive minerals present in near surface soils, the higher the potential for substantial expansion.

As mentioned previously in Section 3.7(c), the project site is underlain by Xerorthents loamy cut and fill areas (USDA 2019). The soils found on site are generally characterized as having a low to moderate shrink/swell potential and a moderate to high rate of infiltration. Xerorthents have a high surface runoff potential (USDA 2019). However, it should be noted that surface soils in the City may no longer reflect the natural soil associations and characteristics identified previously since topsoil in the City has been predominantly developed. Therefore, impacts associated with expansive soil would be less than significant.

- e) ***Would the project 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?***

***No Impact.*** The project site is already developed, and the existing restroom facility is connected to the municipal sewer system. As such, no septic tanks or alternative wastewater disposal systems are proposed. Therefore, no impacts associated with septic tanks or alternative wastewater disposal systems would occur.

- f) ***Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?***

***Less-Than-Significant Impact.*** The proposed project involves the replacement of the existing greenhouse with a new Venlo-style greenhouse, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces within the Horticulture Complex 1600. Minimal grading and earthwork is anticipated as part of the proposed project. This grading would occur within the upper 1–2 feet of the project site, within soils already disturbed by the existing on-site development. Due to the heavy disturbance that has occurred on the project site as a result of previous development activities, it is unlikely that grading activities would encounter intact fossils. Therefore, no impacts associated with paleontological resources would occur.



## 3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>VIII. GREENHOUSE GAS EMISSIONS</b> – 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 an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) ***Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?***

***Less-Than-Significant Impact.*** Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period of time (i.e., decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system, and many factors (natural and human) can cause changes in Earth's energy balance. The greenhouse effect is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature, and it creates a livable environment on Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise. Global climate change is a cumulative impact; a project contributes to this impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. Thus, GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008).

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>) (see also 14 CCR 15364.5). The three GHGs evaluated herein are CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. Emissions of HFCs, PFCs, SF<sub>6</sub>, and NF<sub>3</sub> are generally associated with industrial activities, including the manufacturing of electrical components, heavy duty air conditioning units, and insulation of electrical transmission equipment (e.g., substations, power lines, switch gears). Therefore, emissions of these GHGs were not evaluated or estimated in this analysis, because the proposed project would not include these activities or components and would not generate HFCs, PFCs, SF<sub>6</sub>, and NF<sub>3</sub> in measurable quantities.

Gases in the atmosphere can contribute to climate change both directly and indirectly.<sup>6</sup> The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each

<sup>6</sup> Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2017b).

GHG to trap heat in the atmosphere relative to another gas. The reference gas used is CO<sub>2</sub>; therefore, GWP-weighted emissions are measured in metric tons of CO<sub>2</sub> equivalent (MT CO<sub>2</sub>e). Consistent with CalEEMod, this GHG emissions analysis assumed the GWP for CH<sub>4</sub> is 25 (emissions of 1 MT of CH<sub>4</sub> are equivalent to emissions of 25 MT of CO<sub>2</sub>), and the GWP for N<sub>2</sub>O is 298, based on the Intergovernmental Panel on Climate Change Fourth Assessment Report (IPCC 2007).

As discussed in Section 3.3, Air Quality, of this IS/MND, the proposed project is located within the jurisdictional boundaries of the SCAQMD. In October 2008, the SCAQMD proposed recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects as presented in its *Draft Guidance Document – Interim CEQA Greenhouse Gas Significance Threshold* (SCAQMD 2008). This document, which builds on the previous guidance prepared by the California Air Pollution Control Officers Association, explored various approaches for establishing a significance threshold for GHG emissions. The draft interim CEQA thresholds guidance document was not adopted or approved by the Governing Board. However, in December 2008, the SCAQMD adopted an interim 10,000 MT CO<sub>2</sub>e per year screening level threshold for stationary source/industrial projects for which the SCAQMD is the lead agency (see SCAQMD Resolution No. 08-35, December 5, 2008).

The SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. From December 2008 to September 2010, the SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. The SCAQMD has continued to consider adoption of significance thresholds for residential and general land use development projects. The most recent proposal, issued in September 2010, uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

- Tier 1.** Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.
- Tier 2.** Consider whether or not the proposed project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.
- Tier 3.** Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO<sub>2</sub>e per-year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO<sub>2</sub>e per year), commercial projects (1,400 MT CO<sub>2</sub>e per year), and mixed-use projects (3,000 MT CO<sub>2</sub>e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO<sub>2</sub>e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.
- Tier 4.** Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO<sub>2</sub>e per-service population for project-level analyses and 6.6 MT CO<sub>2</sub>e per-service population for plan-level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

- Tier 5.** Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

Section 15064.7(c) of the CEQA Guidelines specifies that “[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.” The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, establish specific thresholds of significance, or mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency’s discretion to determine the appropriate methodologies and thresholds of significance that are consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009).

To determine the proposed project’s potential to generate GHG emissions that would have a significant impact on the environment, GHG emissions were compared to the quantitative threshold of 3,000 MT CO<sub>2</sub>e per year. Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the project, which is assumed to be 30 years (SCAQMD 2008). Since operational emissions would be minimal, they were not quantified within this analysis. Therefore, this impact analysis compares amortized construction emissions to the proposed SCAQMD threshold of 3,000 MT CO<sub>2</sub>e per year.

### Construction Emissions

Construction associated with the proposed project would result in GHG emissions primarily associated with the use of off-road construction equipment, on-road trucks, and worker vehicles. A depiction of expected construction schedules (including information regarding phasing, equipment used during each phase, truck trips, and worker vehicle trips) assumed for the purposes of emissions estimation is provided in Table 3.3-1 and in Appendix A. On-site sources of GHG emissions include off-road equipment, and off-site sources include trucks and worker vehicles. Table 3.8-1 presents construction GHG emissions for the project from on-site and off-site emissions sources.

**Table 3.8-1. Estimated Annual Construction Greenhouse Gas Emissions**

	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Year	<i>Metric Tons per Year</i>			
2020	16.40	<0.01	0.00	16.46
<b>Amortized Construction Emissions</b>				<b>0.55</b>

**Source:** See Appendix A for complete results.

**Notes:** CO<sub>2</sub> = carbon dioxide; CH<sub>4</sub> = methane; N<sub>2</sub>O = nitrous oxide; CO<sub>2</sub>e = carbon dioxide equivalent.

<sup>a</sup> <0.01 = value less than reported 0.01 metric tons per year.

As shown in Table 3.8-1, the estimated total GHG emissions would be approximately 16 MT CO<sub>2</sub>e. Amortized over 30 years, construction GHG emissions would be approximately 0.6 MT CO<sub>2</sub>e per year. GHG emissions generated during proposed construction activities would be short term, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions.

### Operational Emissions

Once proposed project construction is complete, operational GHG emissions would primarily consist of area sources, energy usage, solid waste generation, and water usage and wastewater generation. Upon

implementation of the proposed project, student capacity would remain the same and thus would not result in additional vehicle trips to the project site. Because the proposed project would generate minimal operational GHG emissions, impacts would be less than significant.

As shown in Table 3.8-1, amortized project-generated construction emissions would not exceed the 3,000 MT CO<sub>2e</sub> per year SCAQMD threshold. Therefore, GHG emissions impacts would be less than significant.

**b) *Would the project generate conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?***

**Less-Than-Significant Impact.** The proposed project would result in less-than-significant impacts related to conflicts with GHG emission reduction plans, for the reasons described as follows.

**Consistency with CARB's Scoping Plan**

The CARB Scoping Plan, approved by CARB in 2008 and updated in 2014 and 2017, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations.<sup>7</sup> Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others.

**Consistency with Executive Order S-3-05 and Senate Bill 32**

The proposed project would not impede the attainment of the GHG reduction goals for 2030 or 2050 identified in Executive Order S-3-05 and Senate Bill (SB) 32. Executive Order S-3-05 establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. SB 32 establishes a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030. While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory of meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014).

CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the first update to the Climate Change Scoping Plan that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the first update to the Climate Change Scoping Plan states that the level of reduction is achievable in California (CARB 2014). CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction

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<sup>7</sup> The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009).

targets set forth in AB 32, SB 32, and Executive Order S-3-05. This is confirmed in the 2017 Scoping Plan, which states (CARB 2017b):

The Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while identifying new, technologically feasible and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities.

The proposed project would not interfere with implementation of any of the previously described GHG reduction goals for 2030 or 2050, because the proposed project would not exceed the SCAQMD's recommended threshold of 3,000 MT CO<sub>2</sub>e per year (SCAQMD 2008). Because the proposed project would not exceed the threshold as presented in Table 3.8-1 and because the proposed project would generate minimal GHG emissions during operations primarily due to energy use, this analysis provides support for the conclusion that the proposed project would not impede the state's trajectory toward the previously described statewide GHG reduction goals for 2030 or 2050.

The proposed project's consistency with the state's Scoping Plan would assist in meeting the City's contribution to GHG emission reduction targets in California. With respect to future GHG targets under SB 32 and Executive Order S-3-05, CARB has also made clear its legal interpretation that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet the SB 32 40% reduction target by 2030 and the Executive Order S-3-05 80% reduction target by 2050. This legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the trajectory toward meeting these future GHG targets.

Based on the considerations previously outlined, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. This impact would be less than significant.

### 3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>IX. HAZARDS AND HAZARDOUS MATERIALS – Would the project:</b>				
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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site that 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 checked="" 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 two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) ***Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?***

***Less-Than-Significant Impact With Mitigation Incorporated.*** The Environmental Health and Safety Department is responsible for ensuring that the transportation, use, and disposal of hazardous materials is conducted safely throughout all District campuses. Hazardous materials would be used during maintenance and construction processes, potentially including fuels, lubricating fluids, solvents, and cleaning products. If these materials were released, they could prove to be hazardous; therefore, the Environmental Health and Safety Department would be responsible for implementing programs to prevent any risks involved with handling hazardous materials.

#### **Construction Impacts**

A variety of hazardous materials, including fuels for equipment and vehicles, new and used motor oils, cleaning solvents, and paints, would be used during construction and renovation activities. Improper handling and/or use of these materials during construction would represent a potential threat to the public and the environment. Accident prevention and containment are the responsibility of the construction contractors, and provisions to properly manage hazardous substances and wastes are included in construction specifications. All contractors are required to comply with applicable laws and regulations regarding hazardous materials and hazardous waste management and disposal. Examples of hazardous materials management include preventing the disposal or release of hazardous materials onto the ground

or into groundwater or surface water during construction and providing completely enclosed containment for all refuse generated in the planning area. In addition, all construction waste, including trash, litter, garbage, solid waste, petroleum products, and any other potentially hazardous materials would be removed and transported to a permitted waste facility for treatment, storage, and/or disposal.

As stated in Section 2.2, Environmental Setting, buildings located within the Horticulture Building 1600 Complex range from 17 to 78 years old. Due to the age of buildings on the project site, construction activities could potentially result in exposure of workers and/or the public to lead-based paint and/or asbestos. Mitigation Measure (MM) HAZ-1 is included to reduce potential impacts to lead-based and/or asbestos exposure to less than significant.

**MM-HAZ-1** Prior to renovation of the restroom facility (Building 1690), a lead-based paint and asbestos survey shall be conducted by a California Occupational Safety and Health Administration-certified asbestos consultant and/or certified site surveillance technician and a California Department of Public Health-certified lead inspector/risk assessor or sampling technician. A report documenting material types, conditions, and general quantities will be provided, along with photos of positive materials and diagrams. Renovation plans and contract specifications shall incorporate any abatement procedures for the removal of material containing asbestos or lead-based paint. All abatement work shall be done in accordance with federal, state, and local regulations.

With incorporation of mitigation, impacts associated with the routine transport, use, or disposal of hazardous materials during construction would be less than significant.

### **Operational Impacts**

Routine operation of the proposed project would include the use of various hazardous materials, including chemical reagents, solvents, paints, and cleansers. These materials would be used for building maintenance. Many of the hazardous materials used would be considered household hazardous wastes, common wastes, and/or universal wastes by the U.S. Environmental Protection Agency, which regards these types of wastes to be common to businesses and households and to pose a lower risk to people and the environment than other hazardous wastes when they are properly stored, transported, used, and disposed of. All hazardous materials generated and/or used on the project property would be managed in accordance with all relevant federal, state, and local laws, including the California Hazardous Waste Control Law (California Health and Safety Code Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (22 CCR 4.5).

Upon completion of proposed project construction, the project site would return to similar existing conditions and would not create a substantial difference in current building maintenance and hazardous waste disposal procedures. Therefore, given the nature of the proposed project and compliance with the regulations mentioned, impacts associated with the transport, use, and disposal of hazardous materials during operation would be less than significant.

- b) ***Would the project 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?***

***Less-Than-Significant Impact With Mitigation Incorporated.*** As previously mentioned in Section 3.9(a), construction activities would involve the use and storage of a variety of hazardous materials, including fuel, oil, grease, solvents, and paints. These materials would be handled, stored, used, and disposed of in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. As a result, the use of hazardous materials for their intended purpose would not pose a significant threat to the public or the environment.

As stated in Section 2.2, buildings located within the Horticulture Building 1600 Complex range from 17 to 78 years old. Due to the age of buildings on the project site, construction activities could potentially result in exposure of workers and/or the public to lead-based paint and/or asbestos. MM-HAZ-1 is included to reduce potential impacts to lead-based and/or asbestos exposure to less than significant. With incorporation of mitigation, impacts associated with foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant.

- c) ***Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?***

***Less-Than-Significant Impact With Mitigation Incorporated.*** The proposed project site is within 0.25 miles of Fullerton Union High School and Raymond Elementary School. As discussed under Section 3.9(a) and Section 3.9(b), with adherence to applicable laws, regulations, and standards, as well as incorporation of MM-HAZ-1, the proposed project would not create a significant risk to the public or the environment related to the use or upset of hazardous materials. As such, it would not create a risk to nearby schools. With incorporation of mitigation, impacts associated with hazardous emissions or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school would be less than significant.

- d) ***Would the project be located on a site that 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?***

***Less-Than-Significant Impact.*** The Hazardous Waste and Substances Sites (Cortese List) is a planning document providing information about the location of hazardous materials release sites. California Government Code Section 6596.2 requires the California Environmental Protection Agency to develop, at least annually, an updated Cortese List. The Department of Toxic Substances Control is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous materials release information for the Cortese List (CalEPA 2019).

A review of Cortese List online data resources identified one site within the proposed project boundary (SWRCB 2019; DTSC 2019). The Fullerton College site references a prior release of petroleum (spillage from overfilling) discovered during underground storage tank closure in 1993 (SWRCB 1993). A cleanup action addressed the issue, and a no further action letter was issued by the Regional Water Quality Control Board in 2004 (SWRCB 2019). Although release cases can be closed with residual contamination in place in soils, the proposed project would not result in the excavation of soils. Minimal grading and earthwork is anticipated as part of the proposed project. This grading would occur within the upper 1–2 feet of the project site, within soils already disturbed by the existing on-site development. Therefore, impacts associated with hazardous materials site would be less than significant.



- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

**Less-Than-Significant Impact.** The closest airport located near the project site is the Fullerton Municipal Airport. The Fullerton Municipal Airport, which is owned and operated by the City, acts as a regional relief airport for Orange County (City of Fullerton 2004). The City adopted the Airport Master Plan, which serves as a “roadmap” for the long-term development of the Fullerton Municipal Airport. The proposed project is located approximately 3.6 miles northeast from the Fullerton Municipal Airport. The project site is not located within the planning area for Fullerton Municipal Airport or any other airport land use plan (ALUC 2005). Therefore, impacts associated with an airport land use plan would be less than significant.

- f) *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

**Less-Than-Significant Impact.** The Division of the State Architect would review all proposed project designs. An access compliance review and fire and life safety review would be performed to prevent implementation impairment of or physical interference with an adopted emergency response plan or emergency evacuation plan. The County of Orange Emergency Operations Plan identifies the County’s emergency planning, organization, response policies, and procedures. The County’s Emergency Operations Plan addresses integration and coordination with other governmental levels when required. The County’s Emergency Operations Plan also addresses how the County will respond to extraordinary events or disasters, from the preparedness phase through recovery. Additionally, the City’s Emergency Operation Plan designates all major streets within the City as evacuation routes in the event of an emergency. In the unlikely event of an extraordinary emergency, City highways and arterial streets that connect to SR-57 and SR-91 would serve as evacuation routes (City of Fullerton 2012b). Due to this local and regional connectivity, in the unlikely event of an emergency, the proposed project-adjacent roadway facilities would be expected to serve as emergency evacuation routes for first responders.

Construction of the proposed project would not require the closure of adjacent and on-campus roadways, which would have the potential to impact emergency procedures. Permitting requirements mandate that the Division of the State Architect perform a fire and life safety review and an access compliance review, respectively, prior to approval of individual project drawings and specification documents. Thus, design of the proposed project would not impair an adopted emergency response plan. Additionally, emergency response and evacuation as a result of the proposed project would be adequately evaluated to ensure the safest possible conditions for students, staff, and visitors at the Fullerton College campus. Once operational, the proposed project would return to pre-construction conditions. As such, the proposed project would not result in additional traffic on roadways. Implementation of the proposed project would not interfere with an adopted emergency response or emergency response or evacuation plan. Therefore, impacts would be less than significant.

- g) *Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?*

**Less-Than-Significant Impact.** The California Department of Forestry and Fire Services (CAL FIRE) is responsible for designating fire hazard severity zones (FHSZs) within the State Responsibility Area throughout California. According to CAL FIRE, the project site is not located within a FHSZ (CAL FIRE 2019). However, the closest high hazard severity zone is located approximately 1.8 miles northwest of the site in

the West Coyote Hills area. The project site is located on Fullerton College campus within a highly urbanized part of the City. The surrounding land use is predominantly residential with the exception of a parking lot to the south and vacant parcels directly north and east of the project site. However, the vacant parcels do not contain extensive amounts of vegetation or wildland fuel, and are located adjacent to roadways and developed residential areas. Therefore, it is not anticipated that the proposed project would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildfires. Thus, impacts would be less than significant.

### 3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>X. HYDROLOGY AND WATER QUALITY – Would the project:</b>				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<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 or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on or off site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) 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 checked="" type="checkbox"/>	<input type="checkbox"/>
iii) 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; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

**Short-Term Construction Impacts**

**Less-Than-Significant Impact.** Construction associated with the proposed project would involve earthwork activities that would potentially disturb soil. However, project construction would be subject to erosion BMPs to reduce the potential for stormwater runoff to cause degradation of water quality. Due to the nature of the proposed project, construction and renovations would occur on already developed, impervious areas. In addition, the proposed project would comply with all applicable water quality standards and discharge requirements of the Santa Ana Regional Water Quality Control Board. Thus, the proposed project would not violate water quality standards or waste discharge requirements during construction, and short-term impacts would be less than significant.

**Long-Term Operational Impacts**

**Less-Than-Significant Impact.** The proposed project would involve the installation of a new greenhouse facility to replace the existing one, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces. As such, the proposed project would not alter the existing flows in a manner which would violate water quality standards or waste discharge requirements. All the areas proposed for replacement and modernization are within impervious areas; thus, the proposed project would not result in an increase in impervious areas. As such, stormwater is expected to be collected, treated, and conveyed in a similar fashion to the existing setting. The amount of stormwater collected on the project site would not be increased, and the existing stormwater drainage infrastructure would be adequate to convey future storm runoff. Therefore, long-term operational impacts associated with water quality would be less than significant.

- b) *Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

**Less-Than-Significant Impact.** The City's water utility provides water services to the Fullerton College campus. The City receives its water from two main sources: (1) local well water from the Lower Santa Ana River Groundwater Basin, which is managed by the Orange County Water District (OCWD), (2) and imported water from the Metropolitan Water District of Southern California (City of Fullerton 2016). The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge, as discussed below.

**Groundwater Supplies**

Water service for the proposed project is and would continue to be through purchase of municipal water from the City. The City's existing sources for water supplies, including local well water and imported water, would serve the proposed project. Proposed renovations to the restroom would be subject to water-efficient plumbing codes or other water-saving measures. Renovations of buildings are likely to achieve significant water savings on a per-capita basis, because modern plumbing codes require the use of low-flow fixtures. Furthermore, OCWD works collaboratively with the Metropolitan Water District of Southern California and other local water districts, such as the City, to implement a comprehensive program to manage the groundwater basin to assure a safe and sustainable supply (OCWD 2015). Therefore, impacts associated with decreasing groundwater supplies would be less than significant.

**Groundwater Recharge**

The proposed project would involve the installation of a new greenhouse facility to replace the existing one, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces. The project site is entirely impervious and, thus, does not serve as a groundwater recharge area. Upon completion of construction, the project site would return to existing conditions. Additionally, the proposed project would not increase impervious areas. As such, the proposed project would not interfere substantially with groundwater recharge. Thus, impacts associated with groundwater recharge would be less than significant.

c) ***Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:***

i) ***result in substantial erosion or siltation on or off site;***

***Less-Than-Significant Impact.*** As mentioned in Section 3.10(a), construction and renovation would take place on previously developed and impervious areas. Project construction would be subject to erosion BMPs to reduce the potential for erosion or siltation on or off site to occur. Upon completion of construction, the project site would return to existing conditions. Additionally, because the project site is located on level or gently sloping topography and is surrounded by urban land uses, the proposed project is not anticipated to substantially modify existing topography or runoff patterns. Therefore, impacts associated with alteration of drainage patterns resulting in erosion or siltation off site would be less than significant.

ii) ***substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;***

***Less-Than-Significant Impact.*** As mentioned in Section 3.10(a), construction and renovation would take place in an already developed area. Additionally, the proposed project would not increase impervious areas to the project site. Upon completion of construction, the project site would return to existing conditions. Furthermore, because the project site is located on level or gently sloping topography and is surrounded by urban land uses, the proposed project is not anticipated to substantially modify existing topography or runoff patterns. The amount of stormwater collected on the project site would not be increased, and the existing stormwater drainage infrastructure would be adequate to ensure no flooding would occur. Therefore, impacts associated with alteration of drainage patterns would be less than significant.

iii) ***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; or***

***Less-Than-Significant Impact.*** As mentioned in Section 3.10(a), construction and renovation would take place in an already developed area. Additionally, the proposed project would not increase impervious areas to the project site. Upon completion of construction, the project site would return to existing conditions. Because the project site is located on level or gently sloping topography and is surrounded by urban land uses, the proposed project is not anticipated to substantially modify existing topography or runoff patterns. Therefore, the proposed project would not be expected to exceed the capacity of the existing stormwater drainage system. Thus, impacts would be less than significant.

**iv) *impede or redirect flood flows?***

**No Impact.** The project site does not contain any streams or rivers having the potential to be altered by the proposed project. The proposed project is fully developed and within a highly urban area. In addition, the project site is not located within a Federal Emergency Management Agency 100-year flood hazard zone (City of Fullerton 2012b). Therefore, no impacts associated with impeding or redirecting flood flows would occur.

**d) *In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?***

**Less-Than-Significant Impact.** The proposed project would not be susceptible to flood hazards, tsunami, or seiche. Seiche is generally associated with oscillation of enclosed bodies of water typically caused by ground shaking associated with a seismic event; however, the project site is not located near an enclosed body of water. Additionally, according to the City's Local Hazard Mitigation Plan, earthquake-induced seiches are not considered a risk in the City (City of Fullerton 2010). Flooding from tsunami conditions is not expected, since the project site is located approximately 14 miles from the Pacific Ocean. As mentioned in Section 3.10(c)(iv), the project site is not located within a Federal Emergency Management Agency 100-year flood hazard zone (City of Fullerton 2012b). Although the proposed project would be located within the vicinity of two dams, the Brea Dam (0.8 miles away) and the Fullerton Dam (2 miles away), implementation of the proposed project would have no effect on the likelihood, severity, or extent of dam failure/inundation. Dams are engineered and regularly monitored by the Department of Water Resources and the U.S. Army Corps of Engineers to ensure that they remain stable in flooding and earthquake situations, and to ensure that problems or deficiencies are detected and repaired. Thus, the potential for failure is relatively low. As such, impacts associated with seiche, tsunami, or flooding would be less than significant.

**e) *Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?***

**Less-Than-Significant Impact.** As stated in Section 3.10(b), OCWD works collaboratively with the Metropolitan Water District of Southern California and other local water districts, such as the City, to implement a comprehensive program to manage the groundwater basin to assure a safe and sustainable supply. The Groundwater Management Plan 2015 Update documents the objectives, operations, and programs aimed at accomplishing the OCWD's mission (OCWD 2015). It is expected that this plan will be compliant with the recently enacted Sustainable Groundwater Management Act. Additionally, the proposed project would comply with regional and local regulations related to water quality control plans. As previously addressed in Section 3.10(b), the proposed project would not result in water demand above existing conditions, and thus would not impact the ability of groundwater basin to maintain existing groundwater levels. As such, the proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, impacts would be less than significant.

### 3.11 Land Use and Planning

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>XI. LAND USE AND PLANNING</b> – Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**a) Would the project physically divide an established community?**

**No Impact.** The physical division of an established community typically refers to the construction of a linear feature (e.g., a major highway or railroad tracks) or removal of a means of access (e.g., a local road or bridge) that would impair mobility within an existing community or between a community and outlying area. Under the existing conditions, the project site is not used as a connection between established communities. The proposed project would involve the installation of a new greenhouse facility to replace the existing one, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces within Horticulture Complex 1600 on the Fullerton College campus. None of the proposed elements would divide or isolate an established community. Therefore, no impacts associated with dividing an established community would occur.

**b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?**

**Less-Than-Significant Impact.** The proposed project would involve the installation of a new greenhouse facility to replace the existing one, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces within the 1600 Building Complex of the Fullerton College campus. The project site currently has a zoning designation of P-L and land use designation of school (City of Fullerton 2017, 2019a); no change in zoning nor land use designation is proposed. The District in general, and Fullerton College specifically, is not subject to local government planning and land use plans, policies, or regulations. Nonetheless, the following sections provides the proposed project's consistency with the Fullerton Plan.

#### Fullerton Plan

The Fullerton Plan is the primary source of long-range planning and policy direction that will guide growth and preserve the quality of life within the community. Pursuant to state law, the Fullerton Plan serves as the City's General Plan and exceeds California's General Plan Guidelines. The proposed project would enhance the Fullerton College campus as a whole and support the long-term viability of the City's higher educational institutions. By updating and modernizing the existing building space to meet the District's instructional needs, the proposed project would support a more resilient campus. Therefore, the proposed project would be consistent with applicable goals and policies set within the Fullerton Plan's Community

Development and Design, Revitalization, and Education chapters. Thus, environmental impacts due to a conflict with any land use plan, policy, or regulation would be less than significant.

## 3.12 Mineral Resources

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>XII. MINERAL RESOURCES</b> – 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"/>

- a) ***Would the project 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?***

**No Impact.** The State Mining and Reclamation Act of 1975 (PRC Section 2710 et seq.) requires that the California State Geologist implement a mineral land classification system to identify and protect mineral resources of regional or statewide significance. According to maps obtained through the California Department of Conservation and California Geological Survey, the project site is located within Mineral Resource Zone 1 (MRZ-1), which is defined as an area where adequate information indicates that no significant mineral deposits are present (DOC 1994). In addition, the Fullerton Plan does not identify any known minerals within the City (City of Fullerton 2012a). Therefore, no impacts associated with loss of availability of a known mineral resource would occur.

- b) ***Would the project 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?***

**No Impact.** As discussed in Section 3.12(a), there are no mineral resources on the proposed project site or within the City. Furthermore, no mineral resource recovery sites are delineated in the Fullerton Plan (City of Fullerton 2012a). Therefore, the proposed project would not result in the loss of availability of a locally important mineral resource, and no impact would occur.

### 3.13 Noise

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>XIII. NOISE</b> – Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) *Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

#### Construction Noise (Short-Term Impacts)

**Less-Than-Significant Impact With Mitigation Incorporated.** Development activities for project construction would generally involve the following sequence, in varying degrees, for all phases of the project: (1) demolition, (2) grading/site work, (3) building construction, and (4) finish work. The following equipment would be used for project construction:

- Concrete/industrial saws
- Skid steer loaders
- Cement and mortar mixers
- Forklifts
- Welders
- Air compressors

Construction noise is difficult to quantify because of the many variables involved, including the specific equipment types, size of equipment used, percentage of time in operation, condition of each piece of equipment, and number of pieces of equipment that will actually operate on site. As an example, a loader operating at full power would generate a maximum sound level of approximately 85 A-weighted decibels (dBA) at 50 feet. As the distance between equipment increases, and/or the separation of areas with simultaneous construction activity increases, dispersion and distance attenuation reduce the effects of separate noise sources added together. In addition, typical operating cycles may involve 2 minutes of full-power operation, followed by 3 or 4 minutes at



lower levels. The average noise level during construction activities is generally lower, since maximum noise generation may only occur up to 50% of the time. The range of maximum noise levels for various types of construction equipment at a distance of 50 feet is depicted in Table 3.13-1.

**Table 3.13-1. Construction Equipment Noise Emission Levels**

Equipment	Typical Sound Level (dBA) 50 Feet from Source
Saw	76
Loader	85
Concrete mixer	85
Forklifts	83
Air compressor	81

**Source:** DOT 2006.

**Note:** dBA= A-weighted decibel.

The nearest off-site sensitive receptors to project construction activities would be single-family and multifamily residential uses near the northwest portion of the project site, located within approximately 180 feet from the project site.

Noise levels from proposed construction activities (with a typical number of equipment operating on the site) would range from 76 to 85 dBA energy equivalent level ( $L_{eq}$ ) at a distance of 50 feet. Noise levels from construction activities generally decrease at a rate of 6 dBA per doubling of distance from the activity. Thus, at a distance of 100 feet from the center of construction activities, construction noise levels would range from 70 to 79 dBA  $L_{eq}$ . At a distance of 500 feet from the center of construction activities, construction noise would range from 64 to 73 dBA  $L_{eq}$ . At a distance of 1,000 feet, construction noise could range up to 58 dBA  $L_{eq}$  to 67 dBA  $L_{eq}$ , but would likely be lower due to additional attenuation from ground effects, air absorption, and shielding from miscellaneous intervening structures. It should be noted, special construction techniques such as pile driving or blasting are not anticipated.

Fullerton College is part of a state agency subject to building permit approvals by the Division of the State Architect, but the City's Noise Control Ordinance provides guidance regarding normal hours for construction activities (Monday through Saturday, 7:00 a.m. to 8:00 p.m.) (City of Fullerton 2001). As part of the standard construction procedure for the project, the District would limit construction activities to those hours set by the City's Noise Control Ordinance. No construction activities are expected on Sundays or on City-recognized holidays, and construction is not expected to occur during nighttime hours. Accordingly, the proposed project would not result in exposure of persons to or generation of noise levels in excess of standards established in the City's Noise Control Ordinance or other applicable noise standards.

However, noise from construction would be audible and would temporarily elevate the local ambient noise level to some degree at on-site and off-site distances greater than 100 feet from construction; therefore, impacts would be significant. In an effort to avoid construction noise impacts, MM-NOI-1 is required to control construction noise to the extent practicable and feasible.

**MM-NOI-1** Prior to initiation of construction on the Fullerton College campus, the North Orange County Community College District shall approve a construction noise mitigation program to include the following:

- Construction equipment shall be properly outfitted and maintained with feasible noise-reduction devices to minimize construction-generated noise.

- Stationary noise sources such as generators shall be located away from noise-sensitive land uses if feasible.
- Laydown and construction vehicle staging areas shall be located away from noise-sensitive land uses if feasible.
- Whenever possible, academic, administrative, and residential areas that will be subject to construction noise shall be informed 1 week before the start of each construction project.
- All construction projects pursuant to the proposed project shall be required to implement the above measures for control of construction noise.
- Compliance with the City's Noise Control Ordinance regarding normal hours for construction activities (Monday through Saturday, 7:00 a.m. to 8:00 p.m.) No construction activities would occur on Sundays or on City-recognized holidays.
- All construction pursuant to the proposed project shall be required to implement the above measures for control of construction noise. North Orange County Community College District will be responsible for ensuring the construction contractor implements this measure. Compliance will be reported and tracked through weekly inspections during construction in an MMRP.

With implementation of MM-NOI-1, construction noise impacts would be less than significant.

#### **Operational Noise (Long-Term Impacts)**

**Less-Than-Significant Impact.** As discussed in Section 2.3, the proposed project would involve the installation of a new greenhouse facility to replace the existing one, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces. As such, on-site noise generated by the proposed project would not change from the existing conditions since no new uses are proposed. The proposed project does not involve the installation of new noise generating uses nor does the proposed project result in an increase in off-site traffic noise. Therefore, noise impacts associated with operations of the proposed project would be less than significant.

#### **b) *Would the project result in generation of excessive groundborne vibration or groundborne noise levels?***

**Less-Than-Significant Impact.** Construction activities may expose persons to excessive groundborne vibration or groundborne noise, causing a potentially significant impact. Caltrans has collected groundborne vibration information related to construction activities (Caltrans 2013). Information from Caltrans indicates that continuous vibrations with a peak particle velocity of approximately 0.2 inches per second (ips) is considered annoying. For context, heavier pieces of construction equipment, such as a bulldozer that may be expected on the project site, have peak particle velocities of approximately 0.089 ips or less at a reference distance of 25 feet (FTA 2006).

Groundborne vibration attenuates rapidly, even over short distances. When groundborne vibration encounters a building foundation, a coupling loss occurs depending on the mass and design. For typical wood-framed houses, like those near the project site, this coupling loss is 5 vibration velocity dB according to Federal Transit Administration guidance (FTA 2006). The attenuation of groundborne vibration as it propagates from source to receptor through intervening soils and rock strata can be estimated with expressions found in Federal Transit Administration and Caltrans guidance. By way of example, for a bulldozer operating on site and as

close as the northwestern project boundary (i.e., 180 feet from the nearest receiving sensitive land use), the estimated vibration velocity level would be 0.004 ips and, thus, no greater than the annoyance threshold recommended by Caltrans. Therefore, vibration-induced annoyance to occupants of nearby existing homes would be less than significant, and no mitigation is required.

Construction vibration, at sufficiently high levels, can also present a building damage risk. However, anticipated construction vibration associated with this proposed project would not yield levels that surpass the guidance limit of 0.3 ips peak particle velocity for older residential structures. Because the predicted vibration level at 180 feet is less than this guidance limit, vibration damage risk to nearby structures would be less than significant, and no mitigation is required.

Once operational, the proposed project would return to existing conditions and is not be expected to feature major producers of groundborne vibration. Anticipated mechanical systems, like ventilation within the restroom, are designed and manufactured to feature rotating (fans, motors) and reciprocating (compressors) components that are well-balanced with isolated vibration within or external to the equipment casings. On this basis, potential vibration impacts due to proposed project operation would be less than significant.

- c) ***For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?***

***Less-Than-Significant Impact.*** The project site is not located within the planning area for Fullerton Municipal Airport or any other airport land use plan (ALUC 2005), and Fullerton Municipal Airport is approximately 33.6 miles northeast of the project site. Therefore, there is little potential to expose people residing or working in the project area to excessive noise levels. Additionally, no private airstrips exist within 2 miles of the project site. Therefore, impacts associated with private airstrip or airport land use plans would be less than significant.

## 3.14 Population and Housing

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>XIV. POPULATION AND HOUSING – Would the project:</b>				
a) Induce substantial unplanned 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 checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) *Would the project induce substantial unplanned 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)?*

**Less-Than-Significant Impact.** The proposed project involves the installation of a new greenhouse facility to replace the existing one, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces within Horticulture Complex 1600 on the Fullerton College campus. No residential use or other land uses typically associated with directly inducing population growth are included as part of the proposed project. Additionally, the number of employees hired to construct and operate the proposed project would be minimal. The proposed project would employ approximately four employees during construction from June 2020 for approximately 3 months. It is likely these workers would be drawn from the region, as the proposed construction is not highly specialized and would not necessitate a call for specialized trade workers from out of the area who may settle here.

The SCAG is a metropolitan planning organization that represents the Counties of Ventura, Los Angeles, San Bernardino, Orange, Riverside, and Imperial. As part of the 2016–2040 RTP/SCS, SCAG has prepared population, household, and employee projection for the region. Table 3.14-1 shows the City's employee projections from 2012 to 2040.

**Table 3.14-1. Employment Growth for the City of Fullerton**

	2012	2040
Employment	60,800	94,100

Source: SCAG 2016.

The proposed greenhouse facility and improvements to existing restroom facilities would conservatively introduce approximately four new employees to the City although it is unlikely this small of a construction project would attract people to move to the area for the job. This increase is 0.01% of SCAG's overall projected growth of 33,300 employees from 2012 to 2040. Therefore, employee growth is consistent with SCAG's overall growth projections and would not result in a substantial increase in population growth.

Furthermore, the proposed project would generally connect to existing utilities and infrastructure located adjacent to the project site. The proposed project would not construct new or extend existing utilities or infrastructure into areas not currently served by such improvements. Thus, the proposed project would not indirectly induce population growth, and no impacts associated with population growth inducement would occur.

- b) *Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

**No Impact.** There is currently no housing on the project site. As such, the site does not support a residential population. Therefore, the proposed project would not displace existing people or housing, and would not necessitate the construction of replacement housing. Thus, no impact would occur.

## 3.15 Public Services

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>XV. PUBLIC SERVICES</b>				
a) 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:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) *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:*

### *Fire protection?*

**Less-Than-Significant Impact.** The proposed project would not involve the development of campus housing that would generate additional students. Although the proposed project would involve replacing the existing greenhouse facility with a new one, student capacity would remain the same, and the proposed project would not directly or indirectly induce substantial population growth. The City is served by the Fullerton Fire Department and has a total of six fire stations. The closest station to the project site is Fire Station 1 (312 East Commonwealth Avenue), located approximately 0.5 miles south of the site. The Fullerton Fire Department would continue to regularly monitor fire department resources to ensure that adequate facilities, staffing, and equipment are available to serve existing and future development and population increases. Therefore, the proposed project would not result in potentially significant impacts to fire protection services. Thus, impacts would be less than significant.

### *Police protection?*

**Less-Than-Significant Impact.** The proposed project would not involve the development of campus housing that would generate additional students. Although the proposed project would involve replacing the existing greenhouse facility with a new one, student capacity would remain the same, and the proposed project would not directly or indirectly induce substantial population growth. The Campus Safety Department would continue to be the primary law enforcement agency on campus, and the proposed project site is already part of the normal patrol and enforcement area of the Campus Safety Department. The Fullerton Police Department would provide additional support only if required. Therefore, the proposed project would not result in potentially significant impacts to police protection services. Thus, impacts would be less than significant.

**Schools?**

**No Impact.** The proposed project would not involve the development of campus housing that would generate additional students. Although the proposed project would involve replacing the existing greenhouse facility with a new one, student capacity would remain the same, and the proposed project would not directly or indirectly induce substantial population growth. Therefore, the Fullerton School District and Fullerton Joint Union High School District located in the City would not experience adverse impacts resulting from the proposed project. No impacts to schools would occur.

**Parks?**

**No Impact.** The proposed project would not result in an increase in the use of existing parks. The proposed project would involve the installation of a new greenhouse facility to replace the existing one, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces. Therefore, nearby parks would not experience an increase in visitors and acceptable service ratios would be maintained. No impacts to parks would occur.

**Other public facilities?**

**No Impact.** The proposed project would have no impact on libraries or other public facilities. The nearest library is the Fullerton Public Library, which is located approximately 1-mile southwest of the project site. The proposed project would not generate new permanent residents in the City who would use public facilities. As such, the proposed project would not increase demand in capacity of existing libraries or other public facilities. No impacts to public facilities would occur.

## 3.16 Recreation

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>XVI. RECREATION</b>				
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"/>

- 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?**

**No Impact.** The proposed project would not result in substantial population growth in the City that would increase the use of existing parks and recreational facilities such that substantial physical deterioration of recreational facilities would occur or be accelerated. Additionally, due to the anticipated limited number of construction personnel, short-term impacts to local recreational facilities would not occur. Therefore, substantial physical deterioration of these facilities would not occur or be accelerated with implementation of the proposed project; therefore, no impact would occur.

- 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?**

**No Impact.** The proposed project would not result in substantial population growth in the City. Furthermore, the proposed project would not promote or indirectly induce new development that would require the construction or expansion of recreational facilities. Because the proposed project would not result in substantial population growth in the City, it would not increase the demand for recreational facilities. As such, impacts associated with the construction or expansion of recreational facilities would not occur.

## 3.17 Transportation

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>XVII.TRANSPORTATION – Would the project:</b>				
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) **Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?**

**Less-Than-Significant Impact.** The proposed project would generate construction-related traffic during the installation of a new greenhouse facility to replace the existing one, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping of the parking spaces. The proposed project is located on the northeastern portion of Fullerton College campus and would be accessed via an unsignalized driveway along Berkley Avenue.

Berkeley Avenue is generally a two-lane roadway with a two-way left-turn lane that generally borders Fullerton College to the north and east and currently provides access to the site via several unsignalized driveways. The posted speed limit on Berkeley Avenue is 35 mph. On-street parking is generally permitted along this roadway in the vicinity of Fullerton College. A Class II bike lane is currently provided along Berkeley Avenue in both directions between Chapman Avenue and Lemon Street. Public transit bus service is provided in the area by the Orange County Transportation Authority. Bus stops near the proposed project are located along Chapman Avenue or Lemon Street.

Based on construction phasing and schedule, the construction activities would occur over a 3-month period and would include four phases. Demolition, grading, building construction, and architectural coating activities would occur consecutively and would require approximately four workers and one truck per day. The construction activities will occur in one shift of approximately 8 hours between 7:00 a.m. and 4:00 p.m. over the weekdays, Monday through Friday.

Construction-related traffic would be short-term and would cause a nominal increase in vehicle trips associated with workers commuting to and from the site and trucks delivering material or equipment. The operation of the new facility would be same as the existing greenhouse, and no increase in student enrollment is anticipated. Construction related activities would occur on the existing site on the campus and would not impact public right-of-way along any roadway facilities. Pedestrian movement around the project site may be impeded during construction, therefore, the contractor shall ensure that alternate pedestrian access is provided at all times. The proposed project would not make any changes to the circulation system nor add any new daily or peak hour vehicle trips. The proposed project would not decrease roadway capacity, generate additional traffic, or change traffic patterns that could cause an impact to the circulation system including transit, roadway, bicycle, and pedestrian facilities. Therefore, the proposed project would not conflict with adopted policies, plans, or programs regarding transit, bicycle, and pedestrian facilities, and impacts would be less than significant.

**b) *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?***

***Less-Than-Significant Impact.*** CEQA Guidelines Section 15064.3, subdivision (b), focuses on specific criteria (VMT), for determining the significance of transportation impacts. It is further divided into four subdivisions: (1) land use projects, (2) transportation projects, (3) qualitative analysis, and (4) methodology. The proposed project would generate temporary construction-related traffic. As mentioned above, the operation of the new facility would be same as the existing greenhouse, and no increase in student enrollment is anticipated; therefore, the proposed project would not generate any new VMT once construction is completed. This proposed project would be categorized under subdivision (b)(3), qualitative analysis. Subdivision (b)(3) recognizes that lead agencies may not be able to quantitatively estimate VMT for every project type. In those circumstances, this subdivision encourages lead agencies to evaluate factors such as the availability of transit, proximity to other destinations, and other factors that may affect the amount of driving required by the project.

As described previously, construction of the proposed project would result in a nominal increase in local traffic as a result of construction-related worker traffic, material and equipment deliveries, and construction activities. VMT generated from construction-related traffic would cease once construction is completed, and VMT levels would return to pre-project conditions. Therefore, vehicle miles generated from construction traffic would be temporary and short term. The proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). Impacts would be less than significant.



- c) **Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

**Less-Than-Significant Impact.** Existing access to the site is via an unsignalized driveway along Berkeley Avenue. The proposed project would not include any new roadway design features, nor would it include any geometric design features; no sharp curves or dangerous intersections are proposed. The existing driveway would remain and would not be altered during or after construction of the proposed project. All construction would be appropriately staged and the contractor shall utilize all appropriate construction controls including temporary signage, access, any detours required, and fencing during construction activities. Potential construction impacts could include temporary loss of parking and/or modification to pedestrian route around the project site. Therefore, the proposed project would not substantially increase hazards due to a geometric roadway design feature or incompatible uses. Impacts would be less than significant.

- d) **Would the project result in inadequate emergency access?**

**Less-Than-Significant Impact.** As shown on Figure 2, access to the project site is available via Berkeley Avenue along the northern boundary of the campus. No changes to the existing street system are proposed that could result in inadequate emergency access to the project. The proposed project would be designed and constructed to local standards and would comply with emergency access requirements. During construction, the contractor shall ensure adequate access is available around the construction site. After construction is completed, the proposed project would continue to be accessible via existing driveways. Therefore, the proposed project would not result in inadequate emergency access, and the impact would be less than significant.

## 3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>XVIII. TRIBAL CULTURAL RESOURCES</b>				
a) 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:				
i) 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) ***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:***

i) ***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)?***

**No Impact.** For a building to be considered historic, it typically must be at least 50 years old so sufficient time has passed to determine whether the events or characteristics of the building will have a contribution to history (OHP 2015). According to the Program EIR, all buildings and structures that were constructed prior to 1972 were photographed, researched, and evaluated in consideration of the CRHR designation criteria and integrity requirements and in consideration of potential impacts to historical resources under CEQA. As a result, the Horticulture Complex was found not eligible under NRHP, CRHR, or City designation criteria (District 2017). Therefore, the proposed project would not result in a significant impact to historic resources as defined in PRC Section 5020.1(k). No impacts associated to a historical resource would occur.

ii) ***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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?***

**Less-Than-Significant Impact.** The proposed project is subject to compliance with AB 52 (PRC Section 21074), which requires consideration of impacts to tribal cultural resources as part of the CEQA process, and requires the District, as the lead agency, to notify any groups that are traditionally or culturally affiliated with the geographic area of the project and who have requested notification.

According to PRC Section 21080.3.1(b), consultation begins if (1) the California Native American tribe requested to lead agency, in writing, to be informed by the lead agency through a formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation.

On August 2, 2019, the District send letters to all NAHC-listed California Native American tribal representatives that have requested project notification pursuant to AB 52. As of October 2, 2019, (60 days since formal notification of the project) no responses have been received by the District. Given no California Native American tribes have responded within 30 days of receipt of formal notification, the District, as the lead agency, will consider consultation concluded. Therefore, impacts to tribal cultural resources would be less than significant.

### 3.19 Utilities and Service Systems

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>XIX. UTILITIES AND SERVICE SYSTEMS</b> – Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) ***Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?***

**No Impact.** The proposed project involves the installation of a new greenhouse facility to replace the existing one, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces within Horticulture Complex 1600 on the Fullerton College campus. Upon completion of construction, the project site would return to existing conditions. Additionally, the proposed project would not involve the development of additional facilities on site; thus, the proposed project would not result in an increase in water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities demands. Therefore, no impact would occur.

- b) ***Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?***

***Less-Than-Significant Impact.*** The City receives its water from two main sources: local water wells from the lower Santa Ana River Groundwater Basin (managed by OCWD) and imported water from the Municipal Water District of Southern California (City of Fullerton 2012b). Once operational, water supplies would serve the proposed greenhouse facility's water system and renovated restroom facilities. As mentioned in Section 3.14(a), the proposed project would not generate population growth and, thus, would not require additional water supplies. Additionally, the proposed project would not result in an increase to Fullerton College's student capacity. As such, water generated from the project site would return to existing conditions. Therefore, impacts related to water supply for future development during normal, dry, and multiple dry years would be less than significant.

- c) ***Would the project 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?***

***Less-Than-Significant Impact.*** According to the City's Program EIR, wastewater generated by the City is managed by the Orange County Sanitation District (City of Fullerton 2012b). Orange County Sanitation District has two operating facilities (Reclamation Plant No. 1 and Treatment Plant No. 2) that treat wastewater. Wastewater generated from the City is collected and treated at Treatment Plant No. 2, which is located at 22212 Brookhurst Street, Huntington Beach. The facility has a total primary treatment capacity of 168 million gallons per day. The estimated average daily effluent received at Plant No. 2 is 127 million gallons per day. Upon completion of construction, the proposed project would return to existing conditions. As such, wastewater generated from the project site would not increase. Furthermore, the proposed project would not involve the development of additional facilities on site. Thus, there would be no increase in wastewater treatment demand as a result of the proposed project, and impacts would be less than significant.

- d) ***Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?***

***Less-Than-Significant Impact.*** Demolition of the existing greenhouse structure and renovations to restroom facilities would result in solid waste. The waste would be recycled or transported to a landfill and disposed of appropriately. Fullerton Municipal Code Chapter 5.15, Waste Reduction and Recycling Plan Requirement for Construction and Demolition Projects, requires applicants to submit a Waste Reduction and Recycling Plan prior to construction (City of Fullerton 2019b). In accordance with AB 939, the construction contractor would ensure that source reduction techniques and recycling measures are incorporated into project construction. Waste generated during construction would be minimal. According to the City's Program EIR, a majority of the City's solid waste is transported to Olinda Alpha Sanitary Landfill. The landfill has a permitted capacity of 74,900,000 cubic yards and remaining capacity of 38,578,383 cubic yards (City of Fullerton 2012b). Upon completion of construction, the project site would return to existing conditions. Therefore, the project site would not result in an increase in solid waste material generated. Thus, impacts associated with generating solid waste in excess of capacity of local infrastructures would be less than significant.

- e) **Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?**

**Less-Than-Significant Impact.** As mentioned in Section 3.19(d), Fullerton Municipal Code Chapter 5.15, Waste Reduction and Recycling Plan Requirement for Construction and Demolition Projects, requires applicants to submit a Waste Reduction and Recycling Plan prior to construction (City of Fullerton 2019b). In relation to the local management and reduction techniques, handling, and disposal of this waste, the proposed project would comply with all City and state solid waste diversion, reduction, and recycling mandates. Therefore, impacts associated with solid waste disposal regulations would be less than significant.

## 3.20 Wildfire

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>XX. WILDFIRE</b> – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

CAL FIRE is responsible for designating FHSZs within the State Responsibility Area throughout California. FHSZs are geographical areas with an elevated risk for wildfire hazard. The State Responsibility Area is the area for which the state assumes financial responsibility for fire suppression and protection. CAL FIRE also creates recommended maps for very high FHSZs within the Local Responsibility Areas, which are then adopted, or modified and adopted, by local jurisdictions. Development within a State Responsibility Area is required to abide by specific development and design standards. A review of CAL FIRE's FHSZ maps and data revealed that the project site is not located within a State Responsibility Area or a very high FHSZ (CAL FIRE 2019).

a) ***Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?***

**Less-Than-Significant Impact.** Construction of the proposed project would not require the closure of adjacent and/or on-campus roadways, which would have the potential to impact emergency procedures. Permitting requirements mandate that the Division of the State Architect perform a fire and life safety review and an access compliance review, respectively, prior to approval of individual project drawings and specification documents. Thus, design of the proposed project would not impair an adopted emergency response plan. Additionally, emergency response and evacuation as a result of the proposed project would be adequately evaluated to ensure the safest possible conditions for students, staff, and visitors at the Fullerton College campus. Once operational, the proposed project would return to pre-construction conditions. As such, the proposed project would not result in additional traffic on roadways. Implementation of the proposed project would not interfere with an adopted emergency response or emergency response or evacuation plan. Therefore, impacts would be less than significant.

b) ***Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?***

**Less-Than-Significant Impact.** As stated in Section 3.19(g), the proposed project is not located in a FHSZ. The closest high hazard severity zone is located approximately 1.8 miles northwest of the project site in the West Coyote Hills area. The project site is surrounded by public land to the south and west, and residential uses to the north and east. Additionally, vacant parcels are located to the north and west of the project site; however, the parcels are divided by roadways and do not contain extensive amounts of vegetation or wildland fuel. Additionally, as mentioned in Section 3.7, Geology and Soils, the City is relatively flat and lacks any hillsides or topographic features (City of Fullerton 2012a). Therefore, it is not anticipated that the proposed project, due to slope, prevailing winds, and other factors, would exacerbate wildfire risks or expose occupants to pollutant concentrations from a wildfire or the uncontrollable spread of a wildfire. Thus, impacts associated with wildfire risks would be less than significant.

c) ***Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?***

**No Impact.** The proposed project involves the installation of a new greenhouse facility to replace the existing one, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces within Horticulture Complex 1600 on the Fullerton College campus. Given the project site currently supports restroom facilities, the site contains existing sanitary sewer connections. Additionally, the proposed project would not involve the construction of roads, fuel breaks, emergency water sources, power lines, or other utilities. Therefore, it is not anticipated that the proposed project would exacerbate fire risk. Thus, no impacts associated with installation or maintenance of associated infrastructure resulting in exacerbated fire risk would occur.

- d) **Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?**

**Less-Than-Significant Impact.** According to the City's Program EIR, the majority of the City has low potential of experiencing landslides. As mentioned in Section 3.7 (a)(iv), the project site is located in an area of the City that is relatively flat and lacks any hillsides or topographic features. The proposed project involves the installation of a new greenhouse facility to replace the existing one, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces. Upon completion of construction, the project site would return to existing conditions. The proposed project would not increase impervious areas. As such, drainage patterns are not expected to change as a result from the proposed project. Therefore, the proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Thus, impacts would be less than significant.

### 3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>XXI. MANDATORY FINDINGS OF SIGNIFICANCE</b>				
a) Does the project have the potential to substantially 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 type="checkbox"/>	<input checked="" 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 considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- a) ***Does the project have the potential to substantially 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?***

***Less-Than-Significant Impact.*** The proposed project involves the installation of a new greenhouse facility to replace the existing one, renovations to the existing restroom building and upgrading pathway accessibility to meet current ADA code requirements, and striping parking spaces within the Horticulture 1600 Building Complex of the Fullerton College campus. Surrounding land uses include public land to the south, and residential uses to the north, east, and west of the project site.

As such, no natural vegetation communities are present within the project site and surrounding area. On-site plant species are limited to non-native, ornamental species. These non-native, ornamental plant species form a non-cohesive plant community that is not known to support any candidate, sensitive, or special-status plant species. Additionally, the proposed project would not remove trees on site. Due to the already developed nature of the project site and the residential activity around the site, it is unlikely that the existing trees would provide desirable nesting opportunities for bird/raptor species, especially considering that more suitable nesting options likely occur within the broader project area. Additionally, the project site does not support wildlife corridors or habitat linkages. Based on the developed nature of the project site and surrounding area, wildlife species that could occur on site include common species typically found in urbanized settings such as house sparrow, mourning dove, and western fence lizard. However, due to the nature of the proposed project and because the project site would return to similar preconstruction conditions, the proposed project would not threaten to eliminate a plant or animal community.

The project site is entirely developed and disturbed land. The project area does not contain any known archaeological resources and has a low probability for encountering archaeological deposits. Due to the heavy disturbance that has occurred on the project site as a result of previous development activities, it is unlikely that grading activities would encounter intact archaeological deposits. Therefore, impacts to important examples of the major periods of California history or prehistory would be less than significant.

- b) ***Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?***

***Less-Than-Significant Impact With Mitigation Incorporated.*** In an effort to determine whether or not the proposed project’s potential impacts are cumulatively considerable, a regional plan approach was used to consider the proposed project with anticipated growth in the region. The proposed project would result in potentially significant project-level impacts involving hazards and hazardous materials, and noise. However, in all cases, mitigation measures have been identified that would reduce these impacts to a less-than-significant level (MM-HAZ-1 and MM-NOI-1). Furthermore, because the proposed project would not create new housing opportunities or additions in employment (see Section 3.14, Population and Housing); the proposed project would not cumulatively contribute to population-driven impacts (e.g., population and housing, utilities, public recreation facilities, public services). All reasonably foreseeable future development in the City would be subject to the same land use and environmental regulations that have been described throughout this document.



Furthermore, all development projects in the City are guided by the policies identified in the Fullerton Plan and by the regulations established in the City Municipal Code. Therefore, compliance with applicable land use and environmental regulations would ensure that environmental effects associated with the proposed project do not combine with effects from reasonably foreseeable future development in the City to cause cumulatively considerable significant impacts. Cumulative impacts would therefore be less than significant with mitigation incorporated.

- c) ***Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?***

***Less-Than-Significant Impact With Mitigation Incorporated.*** As evaluated throughout this document, the proposed project would have no impact, a less-than-significant impact, or a less-than-significant impact with mitigation with respect to all environmental impact areas.

As stated in Section 2.2, buildings located within the Horticulture Building 1600 Complex range from 17 to 78 years old. Due to the age of buildings on the project site, construction activities could potentially result in exposure of workers and/or the public to lead-based paint and/or asbestos. MM-HAZ-1 is recommended to reduce potential impacts to lead-based and/or asbestos exposure to less than significant. Additionally, since noise from construction would temporarily elevate the local ambient noise level to some degree at on-site and off-site distances greater than 100 feet from construction, impacts would be significant. In an effort to avoid construction noise impacts, MM NOI-1 is required to control construction noise to the extent practicable and feasible. Therefore, the proposed project would not directly or indirectly cause substantial adverse effects on human beings. Impacts would be less than significant with mitigation incorporated.

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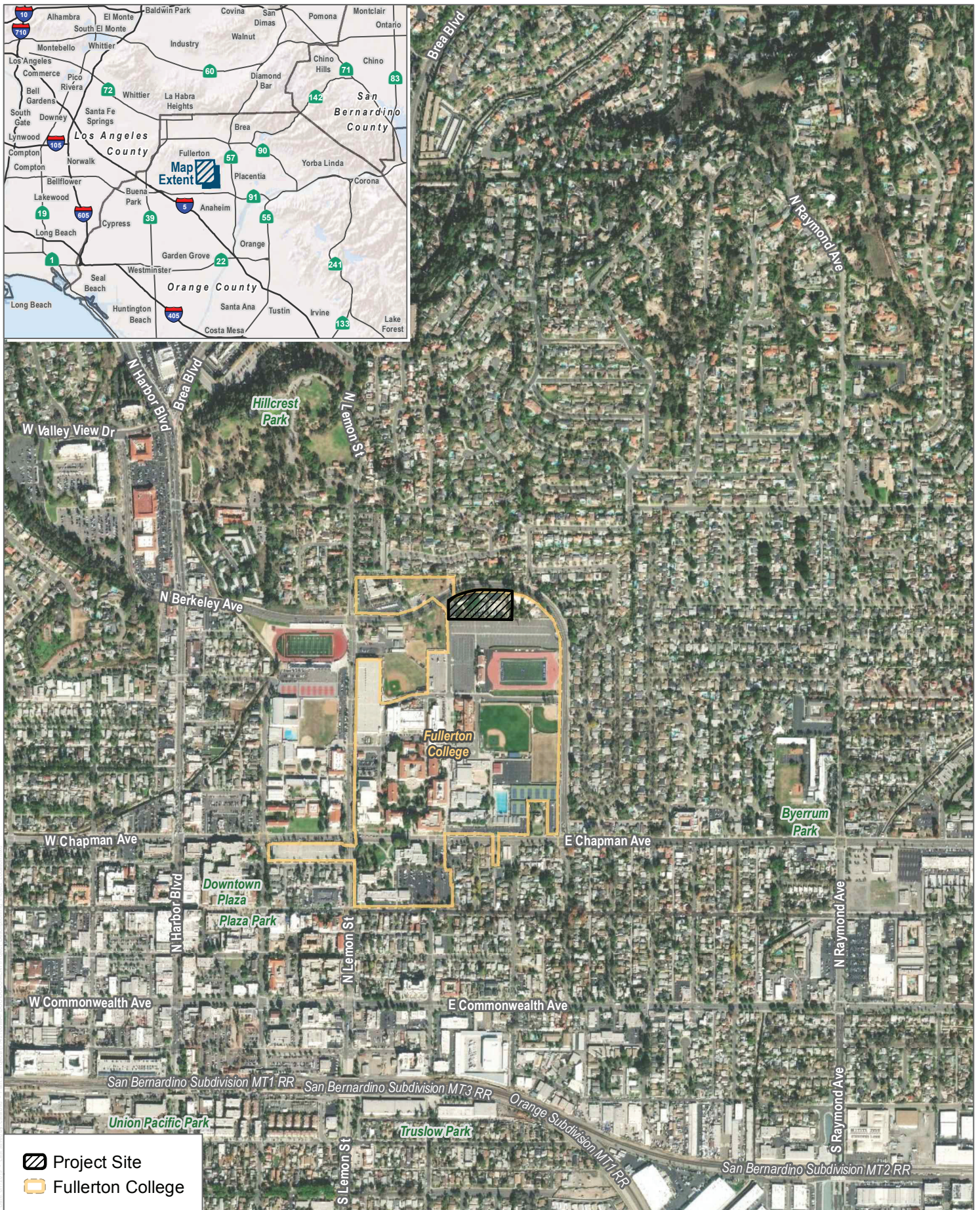
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## 4.2 List of Preparers

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SOURCE: Esri and Digital Globe 2019, Open Street Map 2019

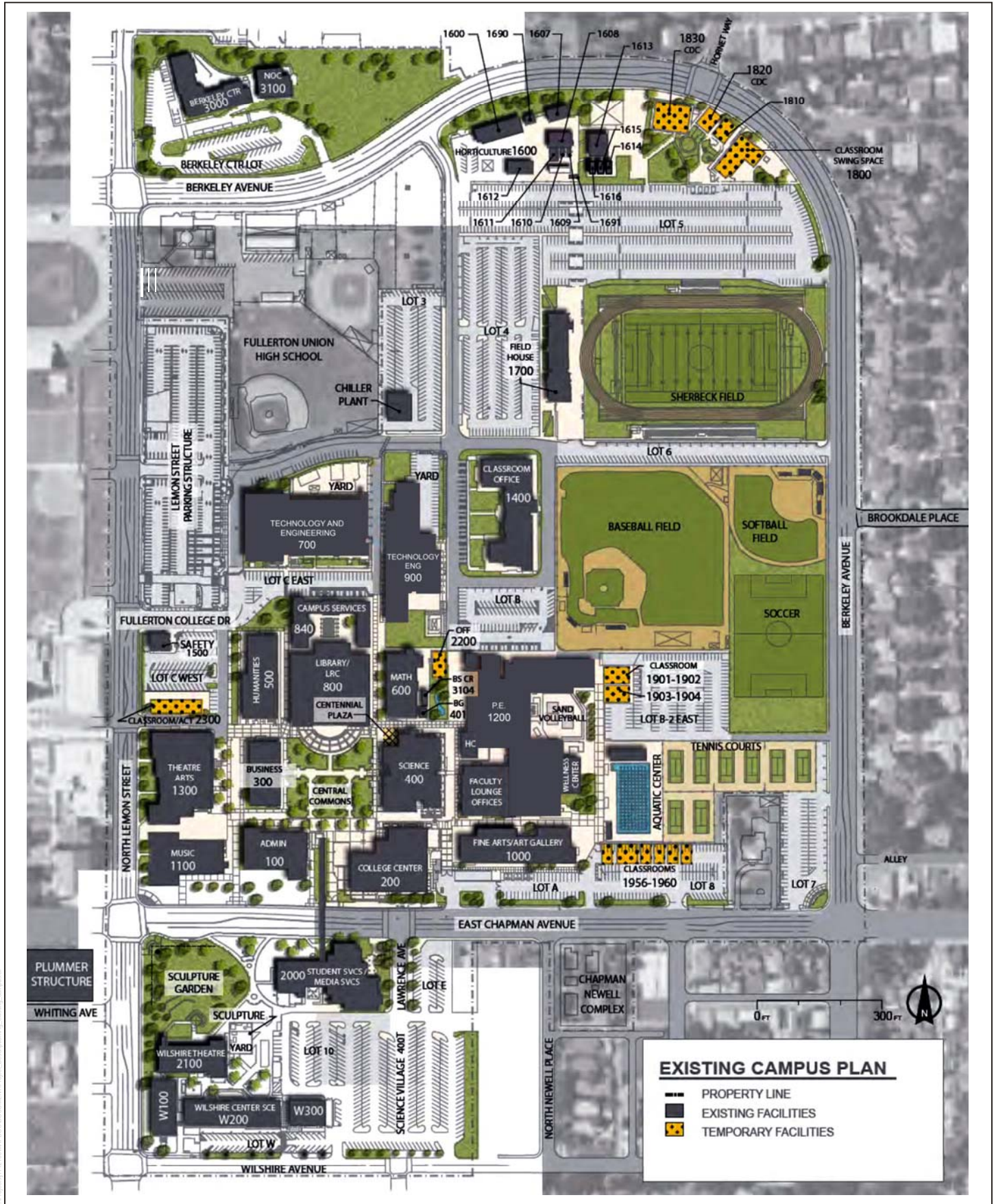
**FIGURE 1**

## Project Location

Greenhouse Replacement and Restroom Modernization Project



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SOURCE: Fullerton College

FIGURE 2

Existing Campus

Greenhouse Replacement and Restroom Modernization Project

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ES2 CURTAIN SYSTEM COVERED  
WITH XLS 40 HARMONY REVOLUX FABRIC

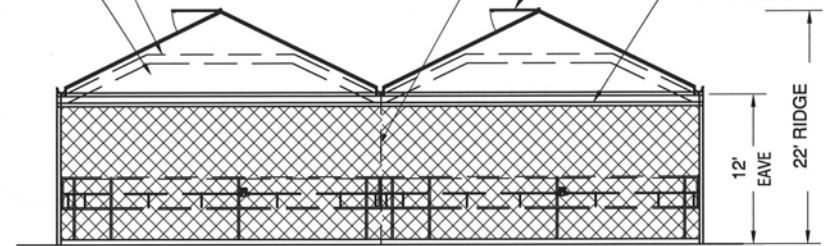
GREENHOUSE ROOF, ENDWALLS, AND  
SIDEWALLS COVERED WITH 8mm  
TWINWALLED POLYCARBONATE

PARTITION WALL COVERED WITH 8mm  
TWINWALLED POLYCARBONATE

ROOF VENT

SCREENED LEAN-TO

12' EAVE  
22' RIDGE



NORTH ELEVATION

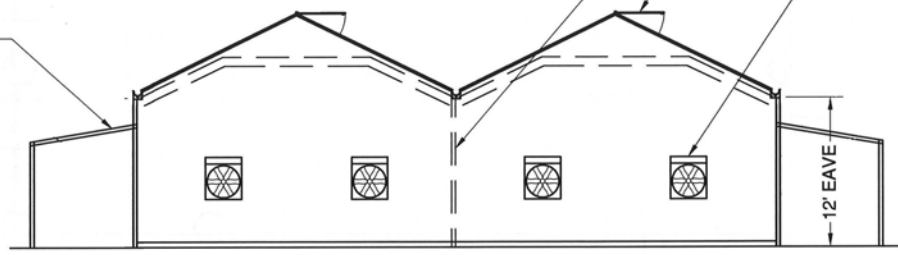
PARTITION WALL COVERED WITH 8mm  
TWINWALLED POLYCARBONATE

ROOF VENT

36" EXHAUST FAN WITH SCREEN BOX

12' EAVE

ENTRY VESTIBULE



SOUTH ELEVATION

2:\projects\14100\00\00\DOCUMENT\Project Drawings\01\Greenhouse.dwg

SOURCE: AGRA 2019

**DUDEK**

**FIGURE 4**

Greenhouse Elevations

Greenhouse Replacement and Restroom Modernization Project



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# Appendix A

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## California Emissions Estimator Model Outputs



CalEEMod Version: CalEEMod.2016.3.2

Date: 8/21/2019 7:23 AM

## Fullerton College - Greenhouse and Toilet Room South Coast AQMD Air District, Annual

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Educational	1.44	User Defined Unit	0.00	1,440.00	0
General Light Industry	2.88	1000sqft	0.07	2,880.00	0

#### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	628.12	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

#### 1.3 User Entered Comments & Non-Default Data

Land Use - 2,880 square foot greenhouse and 1,440 square feet restroom facility.

Construction Phase - Assumed construction start date of June 2020.

Off-road Equipment - Default construction equipment assumed.

Off-road Equipment - Assumed a forklift, a cement and mortar mixer, and 2 welders during building construction.

Off-road Equipment - Assumed industrial saw for demolition.

Off-road Equipment - Assumed skid steer loader for grading.

Trips and VMT - Rounded trips to even number updated worker, vendor and haul trips.

Demolition - Demolition of existing bathroom facility.

Architectural Coating - Updated square footages. Assumed no arch coatings for greenhouse and only interior for toilet room.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,160.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	6,480.00	2,160.00
tblAreaCoating	Area_Nonresidential_Exterior	2160	1440
tblAreaCoating	Area_Nonresidential_Interior	6480	4320
tblConstructionPhase	NumDays	100.00	40.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	PhaseEndDate	11/10/2020	8/11/2020
tblConstructionPhase	PhaseEndDate	11/3/2020	8/4/2020
tblConstructionPhase	PhaseEndDate	6/12/2020	6/5/2020
tblConstructionPhase	PhaseEndDate	6/16/2020	6/9/2020
tblConstructionPhase	PhaseStartDate	11/4/2020	8/5/2020
tblConstructionPhase	PhaseStartDate	6/17/2020	6/10/2020
tblConstructionPhase	PhaseStartDate	6/13/2020	6/6/2020
tblLandUse	LandUseSquareFeet	0.00	1,440.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	628.12
tblTripsAndVMT	HaulingTripNumber	7.00	8.00
tblTripsAndVMT	VendorTripNumber	1.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	6.00
tblTripsAndVMT	WorkerTripNumber	13.00	4.00
tblTripsAndVMT	WorkerTripNumber	2.00	8.00
tblTripsAndVMT	WorkerTripNumber	0.00	2.00

## 2.0 Emissions Summary

## 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	0.0255	0.1157	0.1239	2.1000e-004	3.8000e-003	6.5500e-003	0.0104	1.1500e-003	6.3900e-003	7.5400e-003	0.0000	16.3982	16.3982	2.4100e-003	0.0000	16.4584
Maximum	0.0255	0.1157	0.1239	2.1000e-004	3.8000e-003	6.5500e-003	0.0104	1.1500e-003	6.3900e-003	7.5400e-003	0.0000	16.3982	16.3982	2.4100e-003	0.0000	16.4584

### 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	0.0255	0.1157	0.1239	2.1000e-004	3.8000e-003	6.5500e-003	0.0104	1.1500e-003	6.3900e-003	7.5400e-003	0.0000	16.3982	16.3982	2.4100e-003	0.0000	16.4584
Maximum	0.0255	0.1157	0.1239	2.1000e-004	3.8000e-003	6.5500e-003	0.0104	1.1500e-003	6.3900e-003	7.5400e-003	0.0000	16.3982	16.3982	2.4100e-003	0.0000	16.4584

[illegible]

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2020	6/5/2020	5	5	
2	Grading	Grading	6/6/2020	6/9/2020	5	2	
3	Building Construction	Building Construction	6/10/2020	8/4/2020	5	40	
4	Architectural Coating	Architectural Coating	8/5/2020	8/11/2020	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,160; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Skid Steer Loaders	1	8.00	65	0.37
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Welders	2	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

#### Trips and VMT

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	6.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	14.70	6.90	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					7.1000e-004	0.0000	7.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0500e-003	8.2500e-003	9.2200e-003	2.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	1.3441	1.3441	9.0000e-005	0.0000	1.3463
<b>Total</b>	<b>1.0500e-003</b>	<b>8.2500e-003</b>	<b>9.2200e-003</b>	<b>2.0000e-005</b>	<b>7.1000e-004</b>	<b>5.0000e-004</b>	<b>1.2100e-003</b>	<b>1.1000e-004</b>	<b>5.0000e-004</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>1.3441</b>	<b>1.3441</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>1.3463</b>

#### 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	3.0000e-005	1.1200e-003	2.2000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.3019	0.3019	2.0000e-005	0.0000	0.3024
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	7.0000e-005	5.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1482	0.1482	0.0000	0.0000	0.1483
<b>Total</b>	<b>1.0000e-004</b>	<b>1.1700e-003</b>	<b>7.9000e-004</b>	<b>0.0000</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>2.4000e-004</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.4500</b>	<b>0.4500</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.4506</b>

**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					7.1000e-004	0.0000	7.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0500e-003	8.2500e-003	9.2200e-003	2.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	1.3441	1.3441	9.0000e-005	0.0000	1.3463
<b>Total</b>	<b>1.0500e-003</b>	<b>8.2500e-003</b>	<b>9.2200e-003</b>	<b>2.0000e-005</b>	<b>7.1000e-004</b>	<b>5.0000e-004</b>	<b>1.2100e-003</b>	<b>1.1000e-004</b>	<b>5.0000e-004</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>1.3441</b>	<b>1.3441</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>1.3463</b>

**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	3.0000e-005	1.1200e-003	2.2000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.3019	0.3019	2.0000e-005	0.0000	0.3024
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	7.0000e-005	5.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1482	0.1482	0.0000	0.0000	0.1483
<b>Total</b>	<b>1.0000e-004</b>	<b>1.1700e-003</b>	<b>7.9000e-004</b>	<b>0.0000</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>2.4000e-004</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.4500</b>	<b>0.4500</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.4506</b>

**3.3 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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-005	1.0600e-003	1.3900e-003	0.0000		5.0000e-005	5.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.1816	0.1816	6.0000e-005	0.0000	0.1831
<b>Total</b>	<b>8.0000e-005</b>	<b>1.0600e-003</b>	<b>1.3900e-003</b>	<b>0.0000</b>	<b>7.5000e-004</b>	<b>5.0000e-005</b>	<b>8.0000e-004</b>	<b>4.1000e-004</b>	<b>4.0000e-005</b>	<b>4.5000e-004</b>	<b>0.0000</b>	<b>0.1816</b>	<b>0.1816</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1831</b>

**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	2.0000e-005	1.0000e-005	1.5000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0395	0.0395	0.0000	0.0000	0.0395
<b>Total</b>	<b>2.0000e-005</b>	<b>1.0000e-005</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0395</b>	<b>0.0395</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0395</b>

**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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-005	1.0600e-003	1.3900e-003	0.0000		5.0000e-005	5.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.1816	0.1816	6.0000e-005	0.0000	0.1831
<b>Total</b>	<b>8.0000e-005</b>	<b>1.0600e-003</b>	<b>1.3900e-003</b>	<b>0.0000</b>	<b>7.5000e-004</b>	<b>5.0000e-005</b>	<b>8.0000e-004</b>	<b>4.1000e-004</b>	<b>4.0000e-005</b>	<b>4.5000e-004</b>	<b>0.0000</b>	<b>0.1816</b>	<b>0.1816</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1831</b>

**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	2.0000e-005	1.0000e-005	1.5000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0395	0.0395	0.0000	0.0000	0.0395
<b>Total</b>	<b>2.0000e-005</b>	<b>1.0000e-005</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0395</b>	<b>0.0395</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0395</b>

**3.4 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	0.0177	0.0962	0.1005	1.5000e-004		5.7000e-003	5.7000e-003		5.5400e-003	5.5400e-003	0.0000	11.1312	11.1312	2.0800e-003	0.0000	11.1831
<b>Total</b>	<b>0.0177</b>	<b>0.0962</b>	<b>0.1005</b>	<b>1.5000e-004</b>		<b>5.7000e-003</b>	<b>5.7000e-003</b>		<b>5.5400e-003</b>	<b>5.5400e-003</b>	<b>0.0000</b>	<b>11.1312</b>	<b>11.1312</b>	<b>2.0800e-003</b>	<b>0.0000</b>	<b>11.1831</b>

**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	1.3000e-004	4.2700e-003	1.0600e-003	1.0000e-005	2.5000e-004	2.0000e-005	2.7000e-004	7.0000e-005	2.0000e-005	9.0000e-005	0.0000	0.9838	0.9838	6.0000e-005	0.0000	0.9854
Worker	7.1000e-004	5.5000e-004	6.0600e-003	2.0000e-005	1.7600e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5803	1.5803	5.0000e-005	0.0000	1.5814
<b>Total</b>	<b>8.4000e-004</b>	<b>4.8200e-003</b>	<b>7.1200e-003</b>	<b>3.0000e-005</b>	<b>2.0100e-003</b>	<b>3.0000e-005</b>	<b>2.0400e-003</b>	<b>5.4000e-004</b>	<b>3.0000e-005</b>	<b>5.7000e-004</b>	<b>0.0000</b>	<b>2.5641</b>	<b>2.5641</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>2.5668</b>

**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	0.0177	0.0962	0.1005	1.5000e-004		5.7000e-003	5.7000e-003		5.5400e-003	5.5400e-003	0.0000	11.1312	11.1312	2.0800e-003	0.0000	11.1831
<b>Total</b>	<b>0.0177</b>	<b>0.0962</b>	<b>0.1005</b>	<b>1.5000e-004</b>		<b>5.7000e-003</b>	<b>5.7000e-003</b>		<b>5.5400e-003</b>	<b>5.5400e-003</b>	<b>0.0000</b>	<b>11.1312</b>	<b>11.1312</b>	<b>2.0800e-003</b>	<b>0.0000</b>	<b>11.1831</b>

**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	1.3000e-004	4.2700e-003	1.0600e-003	1.0000e-005	2.5000e-004	2.0000e-005	2.7000e-004	7.0000e-005	2.0000e-005	9.0000e-005	0.0000	0.9838	0.9838	6.0000e-005	0.0000	0.9854
Worker	7.1000e-004	5.5000e-004	6.0600e-003	2.0000e-005	1.7600e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5803	1.5803	5.0000e-005	0.0000	1.5814
<b>Total</b>	<b>8.4000e-004</b>	<b>4.8200e-003</b>	<b>7.1200e-003</b>	<b>3.0000e-005</b>	<b>2.0100e-003</b>	<b>3.0000e-005</b>	<b>2.0400e-003</b>	<b>5.4000e-004</b>	<b>3.0000e-005</b>	<b>5.7000e-004</b>	<b>0.0000</b>	<b>2.5641</b>	<b>2.5641</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>2.5668</b>

### 3.5 Architectural Coating - 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					
Archit. Coating	5.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-004	4.2100e-003	4.5800e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6396
<b>Total</b>	<b>5.6200e-003</b>	<b>4.2100e-003</b>	<b>4.5800e-003</b>	<b>1.0000e-005</b>		<b>2.8000e-004</b>	<b>2.8000e-004</b>		<b>2.8000e-004</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>0.6383</b>	<b>0.6383</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.6396</b>

#### 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	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0494	0.0494	0.0000	0.0000	0.0494
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0494</b>	<b>0.0494</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0494</b>

**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	5.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-004	4.2100e-003	4.5800e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6396
<b>Total</b>	<b>5.6200e-003</b>	<b>4.2100e-003</b>	<b>4.5800e-003</b>	<b>1.0000e-005</b>		<b>2.8000e-004</b>	<b>2.8000e-004</b>		<b>2.8000e-004</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>0.6383</b>	<b>0.6383</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.6396</b>

**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	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0494	0.0494	0.0000	0.0000	0.0494
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0494</b>	<b>0.0494</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0494</b>



CalEEMod Version: CalEEMod.2016.3.2

Date: 8/21/2019 7:25 AM

## Fullerton College - Greenhouse and Toilet Room South Coast AQMD Air District, Summer

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Educational	1.44	User Defined Unit	0.00	1,440.00	0
General Light Industry	2.88	1000sqft	0.07	2,880.00	0

#### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	628.12	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

#### 1.3 User Entered Comments & Non-Default Data

Land Use - 2,880 square foot greenhouse and 1,440 square feet restroom facility.

Construction Phase - Assumed construction start date of June 2020.

Off-road Equipment - Default construction equipment assumed.

Off-road Equipment - Assumed a forklift, a cement and mortar mixer, and 2 welders during building construction.

Off-road Equipment - Assumed industrial saw for demolition.

Off-road Equipment - Assumed skid steer loader for grading.

Trips and VMT - Rounded trips to even number updated worker, vendor and haul trips.

Demolition - Demolition of existing bathroom facility.

Architectural Coating - Updated square footages. Assumed no arch coatings for greenhouse and only interior for toilet room.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,160.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	6,480.00	2,160.00
tblAreaCoating	Area_Nonresidential_Exterior	2160	1440
tblAreaCoating	Area_Nonresidential_Interior	6480	4320
tblConstructionPhase	NumDays	100.00	40.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	PhaseEndDate	11/10/2020	8/11/2020
tblConstructionPhase	PhaseEndDate	11/3/2020	8/4/2020
tblConstructionPhase	PhaseEndDate	6/12/2020	6/5/2020
tblConstructionPhase	PhaseEndDate	6/16/2020	6/9/2020
tblConstructionPhase	PhaseStartDate	11/4/2020	8/5/2020
tblConstructionPhase	PhaseStartDate	6/17/2020	6/10/2020
tblConstructionPhase	PhaseStartDate	6/13/2020	6/6/2020
tblLandUse	LandUseSquareFeet	0.00	1,440.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	628.12
tblTripsAndVMT	HaulingTripNumber	7.00	8.00
tblTripsAndVMT	VendorTripNumber	1.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	6.00
tblTripsAndVMT	WorkerTripNumber	13.00	4.00
tblTripsAndVMT	WorkerTripNumber	2.00	8.00
tblTripsAndVMT	WorkerTripNumber	0.00	2.00

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### 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	lb/day										lb/day					
2020	2.2536	5.0425	5.3998	8.7800e-003	0.7975	0.2865	0.8438	0.4256	0.2786	0.4683	0.0000	795.4624	795.4624	0.1205	0.0000	796.6753
Maximum	2.2536	5.0425	5.3998	8.7800e-003	0.7975	0.2865	0.8438	0.4256	0.2786	0.4683	0.0000	795.4624	795.4624	0.1205	0.0000	796.6753

### 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	lb/day										lb/day					
2020	2.2536	5.0425	5.3998	8.7800e-003	0.7975	0.2865	0.8438	0.4256	0.2786	0.4683	0.0000	795.4624	795.4624	0.1205	0.0000	796.6753
Maximum	2.2536	5.0425	5.3998	8.7800e-003	0.7975	0.2865	0.8438	0.4256	0.2786	0.4683	0.0000	795.4624	795.4624	0.1205	0.0000	796.6753

[illegible]

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2020	6/5/2020	5	5	
2	Grading	Grading	6/6/2020	6/9/2020	5	2	
3	Building Construction	Building Construction	6/10/2020	8/4/2020	5	40	
4	Architectural Coating	Architectural Coating	8/5/2020	8/11/2020	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,160; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Skid Steer Loaders	1	8.00	65	0.37
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Welders	2	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

#### Trips and VMT

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	6.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	14.70	6.90	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	lb/day										lb/day					
Fugitive Dust					0.2835	0.0000	0.2835	0.0429	0.0000	0.0429			0.0000			0.0000
Off-Road	0.4182	3.2986	3.6866	6.2600e-003		0.1982	0.1982		0.1982	0.1982		592.6646	592.6646	0.0375		593.6032
<b>Total</b>	<b>0.4182</b>	<b>3.2986</b>	<b>3.6866</b>	<b>6.2600e-003</b>	<b>0.2835</b>	<b>0.1982</b>	<b>0.4816</b>	<b>0.0429</b>	<b>0.1982</b>	<b>0.2411</b>		<b>592.6646</b>	<b>592.6646</b>	<b>0.0375</b>		<b>593.6032</b>

#### 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	lb/day										lb/day					
Hauling	0.0122	0.4354	0.0866	1.2400e-003	0.0280	1.4000e-003	0.0294	7.6600e-003	1.3400e-003	9.0000e-003		134.1327	134.1327	9.0000e-003		134.3577
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
Worker	0.0272	0.0183	0.2453	6.9000e-004	0.0671	5.1000e-004	0.0676	0.0178	4.7000e-004	0.0183		68.6651	68.6651	1.9700e-003		68.7144
<b>Total</b>	<b>0.0393</b>	<b>0.4537</b>	<b>0.3319</b>	<b>1.9300e-003</b>	<b>0.0950</b>	<b>1.9100e-003</b>	<b>0.0969</b>	<b>0.0255</b>	<b>1.8100e-003</b>	<b>0.0273</b>		<b>202.7977</b>	<b>202.7977</b>	<b>0.0110</b>		<b>203.0721</b>

**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	lb/day										lb/day					
Fugitive Dust					0.2835	0.0000	0.2835	0.0429	0.0000	0.0429			0.0000			0.0000
Off-Road	0.4182	3.2986	3.6866	6.2600e-003		0.1982	0.1982		0.1982	0.1982	0.0000	592.6646	592.6646	0.0375		593.6032
<b>Total</b>	<b>0.4182</b>	<b>3.2986</b>	<b>3.6866</b>	<b>6.2600e-003</b>	<b>0.2835</b>	<b>0.1982</b>	<b>0.4816</b>	<b>0.0429</b>	<b>0.1982</b>	<b>0.2411</b>	<b>0.0000</b>	<b>592.6646</b>	<b>592.6646</b>	<b>0.0375</b>		<b>593.6032</b>

**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	lb/day										lb/day					
Hauling	0.0122	0.4354	0.0866	1.2400e-003	0.0280	1.4000e-003	0.0294	7.6600e-003	1.3400e-003	9.0000e-003		134.1327	134.1327	9.0000e-003		134.3577
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
Worker	0.0272	0.0183	0.2453	6.9000e-004	0.0671	5.1000e-004	0.0676	0.0178	4.7000e-004	0.0183		68.6651	68.6651	1.9700e-003		68.7144
<b>Total</b>	<b>0.0393</b>	<b>0.4537</b>	<b>0.3319</b>	<b>1.9300e-003</b>	<b>0.0950</b>	<b>1.9100e-003</b>	<b>0.0969</b>	<b>0.0255</b>	<b>1.8100e-003</b>	<b>0.0273</b>		<b>202.7977</b>	<b>202.7977</b>	<b>0.0110</b>		<b>203.0721</b>

### 3.3 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	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.0799	1.0624	1.3901	2.0700e-003		0.0460	0.0460		0.0423	0.0423		200.1687	200.1687	0.0647		201.7872
<b>Total</b>	<b>0.0799</b>	<b>1.0624</b>	<b>1.3901</b>	<b>2.0700e-003</b>	<b>0.7528</b>	<b>0.0460</b>	<b>0.7988</b>	<b>0.4138</b>	<b>0.0423</b>	<b>0.4561</b>		<b>200.1687</b>	<b>200.1687</b>	<b>0.0647</b>		<b>201.7872</b>

#### 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	lb/day										lb/day					
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
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
Worker	0.0181	0.0122	0.1635	4.6000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		45.7767	45.7767	1.3200e-003		45.8096
<b>Total</b>	<b>0.0181</b>	<b>0.0122</b>	<b>0.1635</b>	<b>4.6000e-004</b>	<b>0.0447</b>	<b>3.4000e-004</b>	<b>0.0451</b>	<b>0.0119</b>	<b>3.1000e-004</b>	<b>0.0122</b>		<b>45.7767</b>	<b>45.7767</b>	<b>1.3200e-003</b>		<b>45.8096</b>

**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	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.0799	1.0624	1.3901	2.0700e-003		0.0460	0.0460		0.0423	0.0423	0.0000	200.1687	200.1687	0.0647		201.7872
<b>Total</b>	<b>0.0799</b>	<b>1.0624</b>	<b>1.3901</b>	<b>2.0700e-003</b>	<b>0.7528</b>	<b>0.0460</b>	<b>0.7988</b>	<b>0.4138</b>	<b>0.0423</b>	<b>0.4561</b>	<b>0.0000</b>	<b>200.1687</b>	<b>200.1687</b>	<b>0.0647</b>		<b>201.7872</b>

**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	lb/day										lb/day					
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
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
Worker	0.0181	0.0122	0.1635	4.6000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		45.7767	45.7767	1.3200e-003		45.8096
<b>Total</b>	<b>0.0181</b>	<b>0.0122</b>	<b>0.1635</b>	<b>4.6000e-004</b>	<b>0.0447</b>	<b>3.4000e-004</b>	<b>0.0451</b>	<b>0.0119</b>	<b>3.1000e-004</b>	<b>0.0122</b>		<b>45.7767</b>	<b>45.7767</b>	<b>1.3200e-003</b>		<b>45.8096</b>



### 3.4 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	lb/day										lb/day					
Off-Road	0.8869	4.8083	5.0227	7.3500e-003		0.2848	0.2848		0.2770	0.2770		613.5026	613.5026	0.1145		616.3640
<b>Total</b>	<b>0.8869</b>	<b>4.8083</b>	<b>5.0227</b>	<b>7.3500e-003</b>		<b>0.2848</b>	<b>0.2848</b>		<b>0.2770</b>	<b>0.2770</b>		<b>613.5026</b>	<b>613.5026</b>	<b>0.1145</b>		<b>616.3640</b>

#### 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	lb/day										lb/day					
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
Vendor	6.5700e-003	0.2099	0.0500	5.1000e-004	0.0128	1.0400e-003	0.0138	3.6900e-003	9.9000e-004	4.6800e-003		54.8897	54.8897	3.4500e-003		54.9759
Worker	0.0362	0.0243	0.3271	9.2000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.2000e-004	0.0243		91.5534	91.5534	2.6300e-003		91.6192
<b>Total</b>	<b>0.0428</b>	<b>0.2342</b>	<b>0.3770</b>	<b>1.4300e-003</b>	<b>0.1022</b>	<b>1.7200e-003</b>	<b>0.1039</b>	<b>0.0274</b>	<b>1.6100e-003</b>	<b>0.0290</b>		<b>146.4431</b>	<b>146.4431</b>	<b>6.0800e-003</b>		<b>146.5951</b>

**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	lb/day										lb/day					
Off-Road	0.8869	4.8083	5.0227	7.3500e-003		0.2848	0.2848		0.2770	0.2770	0.0000	613.5026	613.5026	0.1145		616.3640
<b>Total</b>	<b>0.8869</b>	<b>4.8083</b>	<b>5.0227</b>	<b>7.3500e-003</b>		<b>0.2848</b>	<b>0.2848</b>		<b>0.2770</b>	<b>0.2770</b>	<b>0.0000</b>	<b>613.5026</b>	<b>613.5026</b>	<b>0.1145</b>		<b>616.3640</b>

**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	lb/day										lb/day					
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
Vendor	6.5700e-003	0.2099	0.0500	5.1000e-004	0.0128	1.0400e-003	0.0138	3.6900e-003	9.9000e-004	4.6800e-003		54.8897	54.8897	3.4500e-003		54.9759
Worker	0.0362	0.0243	0.3271	9.2000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.2000e-004	0.0243		91.5534	91.5534	2.6300e-003		91.6192
<b>Total</b>	<b>0.0428</b>	<b>0.2342</b>	<b>0.3770</b>	<b>1.4300e-003</b>	<b>0.1022</b>	<b>1.7200e-003</b>	<b>0.1039</b>	<b>0.0274</b>	<b>1.6100e-003</b>	<b>0.0290</b>		<b>146.4431</b>	<b>146.4431</b>	<b>6.0800e-003</b>		<b>146.5951</b>

### 3.5 Architectural Coating - 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	lb/day										lb/day					
Archit. Coating	2.0023					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
<b>Total</b>	<b>2.2445</b>	<b>1.6838</b>	<b>1.8314</b>	<b>2.9700e-003</b>		<b>0.1109</b>	<b>0.1109</b>		<b>0.1109</b>	<b>0.1109</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0218</b>		<b>281.9928</b>

#### 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	lb/day										lb/day					
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
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
Worker	9.0500e-003	6.0800e-003	0.0818	2.3000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0800e-003		22.8884	22.8884	6.6000e-004		22.9048
<b>Total</b>	<b>9.0500e-003</b>	<b>6.0800e-003</b>	<b>0.0818</b>	<b>2.3000e-004</b>	<b>0.0224</b>	<b>1.7000e-004</b>	<b>0.0225</b>	<b>5.9300e-003</b>	<b>1.6000e-004</b>	<b>6.0800e-003</b>		<b>22.8884</b>	<b>22.8884</b>	<b>6.6000e-004</b>		<b>22.9048</b>

**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	lb/day										lb/day					
Archit. Coating	2.0023					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
<b>Total</b>	<b>2.2445</b>	<b>1.6838</b>	<b>1.8314</b>	<b>2.9700e-003</b>		<b>0.1109</b>	<b>0.1109</b>		<b>0.1109</b>	<b>0.1109</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0218</b>		<b>281.9928</b>

**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	lb/day										lb/day					
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
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
Worker	9.0500e-003	6.0800e-003	0.0818	2.3000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0800e-003		22.8884	22.8884	6.6000e-004		22.9048
<b>Total</b>	<b>9.0500e-003</b>	<b>6.0800e-003</b>	<b>0.0818</b>	<b>2.3000e-004</b>	<b>0.0224</b>	<b>1.7000e-004</b>	<b>0.0225</b>	<b>5.9300e-003</b>	<b>1.6000e-004</b>	<b>6.0800e-003</b>		<b>22.8884</b>	<b>22.8884</b>	<b>6.6000e-004</b>		<b>22.9048</b>

CalEEMod Version: CalEEMod.2016.3.2

Date: 8/21/2019 7:28 AM

## Fullerton College - Greenhouse and Toilet Room South Coast AQMD Air District, Winter

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Educational	1.44	User Defined Unit	0.00	1,440.00	0
General Light Industry	2.88	1000sqft	0.07	2,880.00	0

#### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	628.12	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

#### 1.3 User Entered Comments & Non-Default Data

Land Use - 2,880 square foot greenhouse.

Construction Phase - Assumed construction start date of June 2020.

Off-road Equipment - Default construction equipment assumed.

Off-road Equipment - Assumed a forklift, a cement and mortar mixer, and 2 welders during building construction.

Off-road Equipment - Assumed industrial saw for demolition.

Off-road Equipment - Assumed skid steer loader for grading.

Trips and VMT - Rounded trips to even number updated worker, vendor and haul trips.

Demolition - Demolition of existing bathroom facility.

Architectural Coating - Updated square footages. Assumed no arch coatings for greenhouse and only interior for toilet room.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,160.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	6,480.00	2,160.00
tblAreaCoating	Area_Nonresidential_Exterior	2160	1440
tblAreaCoating	Area_Nonresidential_Interior	6480	4320
tblConstructionPhase	NumDays	100.00	40.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	PhaseEndDate	11/10/2020	8/11/2020
tblConstructionPhase	PhaseEndDate	11/3/2020	8/4/2020
tblConstructionPhase	PhaseEndDate	6/12/2020	6/5/2020
tblConstructionPhase	PhaseEndDate	6/16/2020	6/9/2020
tblConstructionPhase	PhaseStartDate	11/4/2020	8/5/2020
tblConstructionPhase	PhaseStartDate	6/17/2020	6/10/2020
tblConstructionPhase	PhaseStartDate	6/13/2020	6/6/2020
tblLandUse	LandUseSquareFeet	0.00	1,440.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	628.12
tblTripsAndVMT	HaulingTripNumber	7.00	8.00
tblTripsAndVMT	VendorTripNumber	1.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	6.00
tblTripsAndVMT	WorkerTripNumber	13.00	4.00
tblTripsAndVMT	WorkerTripNumber	2.00	8.00
tblTripsAndVMT	WorkerTripNumber	0.00	2.00

## 2.1 Overall Construction (Maximum Daily Emission)

	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	lb/day										lb/day					
2020	2.2544	5.0446	5.3729	8.7100e-003	0.7975	0.2865	0.8438	0.4256	0.2787	0.4683	0.0000	788.5502	788.5502	0.1206	0.0000	789.7697
Maximum	2.2544	5.0446	5.3729	8.7100e-003	0.7975	0.2865	0.8438	0.4256	0.2787	0.4683	0.0000	788.5502	788.5502	0.1206	0.0000	789.7697

	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	lb/day										lb/day					
2020	2.2544	5.0446	5.3729	8.7100e-003	0.7975	0.2865	0.8438	0.4256	0.2787	0.4683	0.0000	788.5502	788.5502	0.1206	0.0000	789.7697
Maximum	2.2544	5.0446	5.3729	8.7100e-003	0.7975	0.2865	0.8438	0.4256	0.2787	0.4683	0.0000	788.5502	788.5502	0.1206	0.0000	789.7697

[illegible]

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2020	6/5/2020	5	5	
2	Grading	Grading	6/6/2020	6/9/2020	5	2	
3	Building Construction	Building Construction	6/10/2020	8/4/2020	5	40	
4	Architectural Coating	Architectural Coating	8/5/2020	8/11/2020	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,160; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Skid Steer Loaders	1	8.00	65	0.37
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Welders	2	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

#### Trips and VMT

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	6.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	14.70	6.90	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	lb/day										lb/day					
Fugitive Dust					0.2835	0.0000	0.2835	0.0429	0.0000	0.0429			0.0000			0.0000
Off-Road	0.4182	3.2986	3.6866	6.2600e-003		0.1982	0.1982		0.1982	0.1982		592.6646	592.6646	0.0375		593.6032
<b>Total</b>	<b>0.4182</b>	<b>3.2986</b>	<b>3.6866</b>	<b>6.2600e-003</b>	<b>0.2835</b>	<b>0.1982</b>	<b>0.4816</b>	<b>0.0429</b>	<b>0.1982</b>	<b>0.2411</b>		<b>592.6646</b>	<b>592.6646</b>	<b>0.0375</b>		<b>593.6032</b>

#### 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	lb/day										lb/day					
Hauling	0.0125	0.4410	0.0933	1.2200e-003	0.0280	1.4300e-003	0.0294	7.6600e-003	1.3600e-003	9.0300e-003		131.6637	131.6637	9.3900e-003		131.8985
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
Worker	0.0296	0.0200	0.2209	6.4000e-004	0.0671	5.1000e-004	0.0676	0.0178	4.7000e-004	0.0183		64.2219	64.2219	1.8400e-003		64.2679
<b>Total</b>	<b>0.0421</b>	<b>0.4610</b>	<b>0.3141</b>	<b>1.8600e-003</b>	<b>0.0950</b>	<b>1.9400e-003</b>	<b>0.0970</b>	<b>0.0255</b>	<b>1.8300e-003</b>	<b>0.0273</b>		<b>195.8856</b>	<b>195.8856</b>	<b>0.0112</b>		<b>196.1664</b>

**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	lb/day										lb/day					
Fugitive Dust					0.2835	0.0000	0.2835	0.0429	0.0000	0.0429			0.0000			0.0000
Off-Road	0.4182	3.2986	3.6866	6.2600e-003		0.1982	0.1982		0.1982	0.1982	0.0000	592.6646	592.6646	0.0375		593.6032
<b>Total</b>	<b>0.4182</b>	<b>3.2986</b>	<b>3.6866</b>	<b>6.2600e-003</b>	<b>0.2835</b>	<b>0.1982</b>	<b>0.4816</b>	<b>0.0429</b>	<b>0.1982</b>	<b>0.2411</b>	<b>0.0000</b>	<b>592.6646</b>	<b>592.6646</b>	<b>0.0375</b>		<b>593.6032</b>

**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	lb/day										lb/day					
Hauling	0.0125	0.4410	0.0933	1.2200e-003	0.0280	1.4300e-003	0.0294	7.6600e-003	1.3600e-003	9.0300e-003		131.6637	131.6637	9.3900e-003		131.8985
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
Worker	0.0296	0.0200	0.2209	6.4000e-004	0.0671	5.1000e-004	0.0676	0.0178	4.7000e-004	0.0183		64.2219	64.2219	1.8400e-003		64.2679
<b>Total</b>	<b>0.0421</b>	<b>0.4610</b>	<b>0.3141</b>	<b>1.8600e-003</b>	<b>0.0950</b>	<b>1.9400e-003</b>	<b>0.0970</b>	<b>0.0255</b>	<b>1.8300e-003</b>	<b>0.0273</b>		<b>195.8856</b>	<b>195.8856</b>	<b>0.0112</b>		<b>196.1664</b>

**3.3 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	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.0799	1.0624	1.3901	2.0700e-003		0.0460	0.0460		0.0423	0.0423		200.1687	200.1687	0.0647		201.7872
<b>Total</b>	<b>0.0799</b>	<b>1.0624</b>	<b>1.3901</b>	<b>2.0700e-003</b>	<b>0.7528</b>	<b>0.0460</b>	<b>0.7988</b>	<b>0.4138</b>	<b>0.0423</b>	<b>0.4561</b>		<b>200.1687</b>	<b>200.1687</b>	<b>0.0647</b>		<b>201.7872</b>

**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	lb/day										lb/day					
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
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
Worker	0.0197	0.0133	0.1472	4.3000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		42.8146	42.8146	1.2300e-003		42.8453
<b>Total</b>	<b>0.0197</b>	<b>0.0133</b>	<b>0.1472</b>	<b>4.3000e-004</b>	<b>0.0447</b>	<b>3.4000e-004</b>	<b>0.0451</b>	<b>0.0119</b>	<b>3.1000e-004</b>	<b>0.0122</b>		<b>42.8146</b>	<b>42.8146</b>	<b>1.2300e-003</b>		<b>42.8453</b>

**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	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.0799	1.0624	1.3901	2.0700e-003		0.0460	0.0460		0.0423	0.0423	0.0000	200.1687	200.1687	0.0647		201.7872
<b>Total</b>	<b>0.0799</b>	<b>1.0624</b>	<b>1.3901</b>	<b>2.0700e-003</b>	<b>0.7528</b>	<b>0.0460</b>	<b>0.7988</b>	<b>0.4138</b>	<b>0.0423</b>	<b>0.4561</b>	<b>0.0000</b>	<b>200.1687</b>	<b>200.1687</b>	<b>0.0647</b>		<b>201.7872</b>

**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	lb/day										lb/day					
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
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
Worker	0.0197	0.0133	0.1472	4.3000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		42.8146	42.8146	1.2300e-003		42.8453
<b>Total</b>	<b>0.0197</b>	<b>0.0133</b>	<b>0.1472</b>	<b>4.3000e-004</b>	<b>0.0447</b>	<b>3.4000e-004</b>	<b>0.0451</b>	<b>0.0119</b>	<b>3.1000e-004</b>	<b>0.0122</b>		<b>42.8146</b>	<b>42.8146</b>	<b>1.2300e-003</b>		<b>42.8453</b>

**3.4 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	lb/day										lb/day					
Off-Road	0.8869	4.8083	5.0227	7.3500e-003		0.2848	0.2848		0.2770	0.2770		613.5026	613.5026	0.1145		616.3640
<b>Total</b>	<b>0.8869</b>	<b>4.8083</b>	<b>5.0227</b>	<b>7.3500e-003</b>		<b>0.2848</b>	<b>0.2848</b>		<b>0.2770</b>	<b>0.2770</b>		<b>613.5026</b>	<b>613.5026</b>	<b>0.1145</b>		<b>616.3640</b>

**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	lb/day										lb/day					
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
Vendor	6.8800e-003	0.2097	0.0557	5.0000e-004	0.0128	1.0600e-003	0.0139	3.6900e-003	1.0100e-003	4.6900e-003		53.3026	53.3026	3.7000e-003		53.3951
Worker	0.0395	0.0266	0.2945	8.6000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.2000e-004	0.0243		85.6292	85.6292	2.4600e-003		85.6906
<b>Total</b>	<b>0.0464</b>	<b>0.2363</b>	<b>0.3502</b>	<b>1.3600e-003</b>	<b>0.1022</b>	<b>1.7400e-003</b>	<b>0.1040</b>	<b>0.0274</b>	<b>1.6300e-003</b>	<b>0.0290</b>		<b>138.9318</b>	<b>138.9318</b>	<b>6.1600e-003</b>		<b>139.0857</b>

**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	lb/day										lb/day					
Off-Road	0.8869	4.8083	5.0227	7.3500e-003		0.2848	0.2848		0.2770	0.2770	0.0000	613.5026	613.5026	0.1145		616.3640
<b>Total</b>	<b>0.8869</b>	<b>4.8083</b>	<b>5.0227</b>	<b>7.3500e-003</b>		<b>0.2848</b>	<b>0.2848</b>		<b>0.2770</b>	<b>0.2770</b>	<b>0.0000</b>	<b>613.5026</b>	<b>613.5026</b>	<b>0.1145</b>		<b>616.3640</b>

**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	lb/day										lb/day					
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
Vendor	6.8800e-003	0.2097	0.0557	5.0000e-004	0.0128	1.0600e-003	0.0139	3.6900e-003	1.0100e-003	4.6900e-003		53.3026	53.3026	3.7000e-003		53.3951
Worker	0.0395	0.0266	0.2945	8.6000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.2000e-004	0.0243		85.6292	85.6292	2.4600e-003		85.6906
<b>Total</b>	<b>0.0464</b>	<b>0.2363</b>	<b>0.3502</b>	<b>1.3600e-003</b>	<b>0.1022</b>	<b>1.7400e-003</b>	<b>0.1040</b>	<b>0.0274</b>	<b>1.6300e-003</b>	<b>0.0290</b>		<b>138.9318</b>	<b>138.9318</b>	<b>6.1600e-003</b>		<b>139.0857</b>

**3.5 Architectural Coating - 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	lb/day										lb/day					
Archit. Coating	2.0023					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
<b>Total</b>	<b>2.2445</b>	<b>1.6838</b>	<b>1.8314</b>	<b>2.9700e-003</b>		<b>0.1109</b>	<b>0.1109</b>		<b>0.1109</b>	<b>0.1109</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0218</b>		<b>281.9928</b>

**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	lb/day										lb/day					
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
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
Worker	9.8700e-003	6.6600e-003	0.0736	2.1000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0800e-003		21.4073	21.4073	6.1000e-004		21.4227
<b>Total</b>	<b>9.8700e-003</b>	<b>6.6600e-003</b>	<b>0.0736</b>	<b>2.1000e-004</b>	<b>0.0224</b>	<b>1.7000e-004</b>	<b>0.0225</b>	<b>5.9300e-003</b>	<b>1.6000e-004</b>	<b>6.0800e-003</b>		<b>21.4073</b>	<b>21.4073</b>	<b>6.1000e-004</b>		<b>21.4227</b>

**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	lb/day										lb/day					
Archit. Coating	2.0023					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
<b>Total</b>	<b>2.2445</b>	<b>1.6838</b>	<b>1.8314</b>	<b>2.9700e-003</b>		<b>0.1109</b>	<b>0.1109</b>		<b>0.1109</b>	<b>0.1109</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0218</b>		<b>281.9928</b>

**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	lb/day										lb/day					
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
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
Worker	9.8700e-003	6.6600e-003	0.0736	2.1000e-004	0.0224	1.7000e-004	0.0225	5.9300e-003	1.6000e-004	6.0800e-003		21.4073	21.4073	6.1000e-004		21.4227
<b>Total</b>	<b>9.8700e-003</b>	<b>6.6600e-003</b>	<b>0.0736</b>	<b>2.1000e-004</b>	<b>0.0224</b>	<b>1.7000e-004</b>	<b>0.0225</b>	<b>5.9300e-003</b>	<b>1.6000e-004</b>	<b>6.0800e-003</b>		<b>21.4073</b>	<b>21.4073</b>	<b>6.1000e-004</b>		<b>21.4227</b>