

**Final Initial Study/ Proposed Mitigated Negative Declaration**  
**University of California Santa Cruz**  
**Telecommunications Infrastructure Upgrade Phase A**  
**(Tiered from 2005 LRDP EIR)**

Prepared By:

Office of Physical Planning & Construction  
University of California Santa Cruz  
1156 High Street, Barn G  
Santa Cruz, CA 95064

February 2013

Contact: Alisa Klaus, Senior Environmental Planner  
(831) 459-3732

# TABLE OF CONTENTS

1	Project Information.....	1
2	Introduction.....	3
	2.1 Initial Study .....	3
	2.2 Public and Agency Review.....	3
	2.3 Project Approvals .....	3
	2.4 Organization of the Initial Study .....	3
3	Project Description.....	5
	3.1 Project Location.....	5
	3.2 Project Overview .....	7
	3.3 Project Background, Need and Objectives .....	7
	3.4 Project Discretionary Approvals.....	8
	3.5 Consistency with the 2005 LRDP.....	8
	3.6 Detailed project Description .....	8
	3.7 Sustainable Design Elements.....	11
	3.8 Population .....	12
	3.9 Construction Schedule and Staging .....	12
4	Environmental Factors Potentially Affected .....	12
5	Determination .....	13
6	Evaluation of Environmental Impacts.....	14
	6.1 Aesthetics.....	15
	6.2 Agricultural Resources .....	19
	6.3 Air Quality .....	21
	6.4 Biological Resources .....	24
	6.5 Cultural Resources.....	35
	6.6 Geology, Soils, & Seismicity.....	38
	6.7 Greenhouse Gas Emissions.....	41
	6.8 Hazards and Hazardous materials.....	46
	6.9 Hydrology & Water Quality .....	49
	6.10 Land Use & Planning.....	52
	6.11 Mineral Resources .....	53
	6.12 Noise.....	54
	6.13 Population & Housing .....	57
	6.14 Public Services.....	58
	6.15 Recreation.....	59
	6.16 Traffic, Circulation and Parking .....	60
	6.17 Utilities & Service Systems .....	62
	6.18 Mandatory Findings of Significance.....	64
7	Fish & Game Determination.....	66
8	References .....	67
9	Agencies & Persons Consulted .....	69

10	Report Preparers .....	69
----	------------------------	----

**FIGURES**

Figure 3-1. Project Location Map .....	5
Figure 3-2. Proposed South Core Building Location.....	9
Figure 6.1-1. View of South Core Building Site, Existing Conditions.....	16
Figure 6.1-2. View of South Core Building Site, with Project .....	17
Figure 6.4-1. Biological Resource Survey Areas.....	32
Figure 6.4-2. Inclusion Area D Preserve.....	33

**APPENDICES**

Appendix A. Proposed Mitigated Negative Declaration	
Appendix B. 2005 LRDP EIR Mitigation Measures Included in the Project	
Appendix C. Proposed Mitigation Monitoring Plan	
Appendix D. CalEEMod Results	
Appendix E. Responses to Comments on the Draft Initial Study/Mitigated Negative Declaration	

**1 PROJECT INFORMATION**

**Project title:**

Telecommunications Infrastructure Improvements Phase A

**Project location:**

Various locations on the UC Santa Cruz main campus, Santa Cruz, CA

**Lead agency's name and address:**

The Regents of the University of California

1111 Franklin Street

Oakland, CA 94607

**Contact person:**

Alisa Klaus, Senior Environmental Planner (831) 459-3732

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

Office of Physical Planning & Construction

University of California Santa Cruz

1156 High Street, Barn G

Santa Cruz, CA 95064

**Location of administrative record:**

See Project sponsor, above.

**Identification of previous documents relied upon for tiering purposes:**

UCSC 2005 Long Range Development Plan Environmental Impact Report. Available on line at:

<http://lrdep.ucsc.edu/final-eir.shtml>

## **2 INTRODUCTION**

### **2.1 INITIAL STUDY**

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

The purpose of this Initial Study is to evaluate the potential environmental impacts of the proposed project to determine what level of additional environmental review, if any, is appropriate. As shown in the Determination form in Section 5 of this document and based on the analysis contained in this Initial Study, which is tiered from the UCSC 2005 Long Range Development Plan Environmental Impact Report, it has been determined that the proposed project would not result in any potentially significant impacts that either were not previously identified and analyzed in the 2005 LRDP EIR, or that cannot be mitigated to less-than-significant levels through mitigation included in the project.

The analysis contained in this Initial Study concludes that the proposed project would result in the following categories of impacts, depending on the environmental issue involved: no impact; less-than-significant impact; or a less-than-significant impact with the implementation of mitigation measures. Therefore, preparation of a Mitigated Negative Declaration is appropriate. The proposed Mitigated Negative Declaration is presented in Appendix A.

### **2.2 PUBLIC AND AGENCY REVIEW**

This Draft Initial Study was circulated for public and agency review from October 31, 2012 to November 2, 2012. Copies of this document were available for review at the following locations:

UCSC Physical Planning and Construction, Barn G, UC Santa Cruz

McHenry Library and the Science and Engineering Library on the UC Santa Cruz campus

Central Branch of the Santa Cruz Public Library in downtown Santa Cruz

The UC Santa Cruz web site, at <http://ppc.ucsc.edu>

One comment letter was received from a public agency during the public review period. This comment letter and the University's response is included in Appendix E. Minor revisions to the text of the Draft Initial Study have been made in response to this comment letter.

### **2.3 PROJECT APPROVALS**

As a public agency principally responsible for approving or carrying out the proposed project, the University of California is the Lead Agency under CEQA and is responsible for certifying the adequacy of the environmental document and approving the proposed project. It is anticipated that the UC decision-maker will consider the Initial Study/Mitigated Negative Declaration and Project design approval in January 2013.

### **2.4 ORGANIZATION OF THE INITIAL STUDY**

This Initial Study is organized into the following sections:

**Section 1 - Project Information:** provides summary background information about the proposed project, including project location, lead agency, and contact information.

**Section 2 - Introduction:** summarizes the scope of the document, the project's review and approval processes, and the document's organization.

**Section 3 - Project Description:** presents a description of the proposed project, including the need for the project, the project's objectives, and the elements included in the project.

**Section 4 - Environmental Factors Potentially Affected:** addresses whether this Initial Study identifies any environmental factors that involve a significant or potentially significant impact that cannot be reduced to a less-than-significant level.

**Section 5 - Determination:** indicates whether impacts associated with the proposed project are significant and what, if any, additional environmental documentation is required.

**Section 6 - Evaluation of Environmental Impacts:** contains the Environmental Checklist form for each resource area. The checklist is used to assist in evaluating the potential environmental impacts of the proposed project. This section also presents a background summary for each resource area, the standards of significance, and an explanation of all checklist answers.

**Section 7 - Fish and Game Determination:** indicates whether the project has a potential to impact wildlife or habitat and therefore will require payment of a Fish and Game filing fee.

**Section 8 – References**

**Section 9 - Agencies and Persons Consulted**

**Section 10 - Report Preparers**

**Appendix A – Proposed Mitigated Negative Declaration**

**Appendix B – 2005 LRDP Mitigation Measures Incorporated in the Project**

**Appendix C – Proposed Mitigation Monitoring and Reporting Program**

**Appendix D – CalEEMod Results**

**Appendix E – Responses to Comments on the Draft Initial Study/Mitigated Negative Declaration**

### **3 PROJECT DESCRIPTION**

#### **3.1 PROJECT LOCATION**

The University of California Santa Cruz (UC Santa Cruz) is located on the coast of Monterey Bay in Santa Cruz County, approximately 70 miles south of San Francisco, 30 miles southeast of San Jose and 30 miles north of Monterey (Figure 3-1). The approximately 2,020-acre main campus is roughly rectangular in shape, with its narrow side toward the coast. Approximately 53 percent of the main campus, including most of the area that is currently developed, is located within the city limits of Santa Cruz; the remainder is in unincorporated Santa Cruz County. Approximately 250 acres of undeveloped campus land on the western side of the Empire Grade are within the Coastal Zone.

Public open space borders the campus on two sides: Pogonip City Park and Henry Cowell Redwoods State Park on the east and Wilder Ranch State Park on the west. On the south, the campus borders the City's upper west side residential neighborhoods. The rural residential Cave Gulch neighborhood is located adjacent to a portion of the campus's northwestern boundary. To the north, the campus is bounded by private land and small-scale rural development. High Street, Bay Street, Western Drive, and Empire Grade Road are the primary access routes to the main campus.

The project consists of upgrades to the interior telecommunications infrastructure in 28 existing buildings, installation of new telecommunications conduit, fiber, and vaults between various locations on the campus, and construction of a new South Core Building in the Campus Facilities area near the southern end of the campus. The existing buildings that would be affected by the project are located on the west side of the campus (in the Arboretum and three of the Campus' ten residential colleges), and in the Science and Engineering Area of the central campus. The routes of the proposed new telecommunications conduit are shown on Figure 3-1. One route would extend from the Granary at the southern end of the campus to Oakes College. The new conduit on this route would be installed along the north side of High Street, beneath existing paths and roads through the Arboretum, and through the meadow north of the Arboretum, primarily beneath an existing fire road. Several shorter segments of new conduit would be installed beneath existing paved roads in the Campus Facilities in the southern campus and through grassland southwest of the new South Core Building; beneath Hagar Drive, Steinhart Way, and the Cowell/Stevenson access road on the east side of the central campus; in Porter College; and in the vicinity of the Central Heat Plant at the northern edge of the central campus.

The new South Core Building would be installed northwest of and adjacent to a Physical Plant storage barn, northwest of the Emergency Response Center parking lot. The site is currently occupied by several garden storage sheds, which would be demolished.

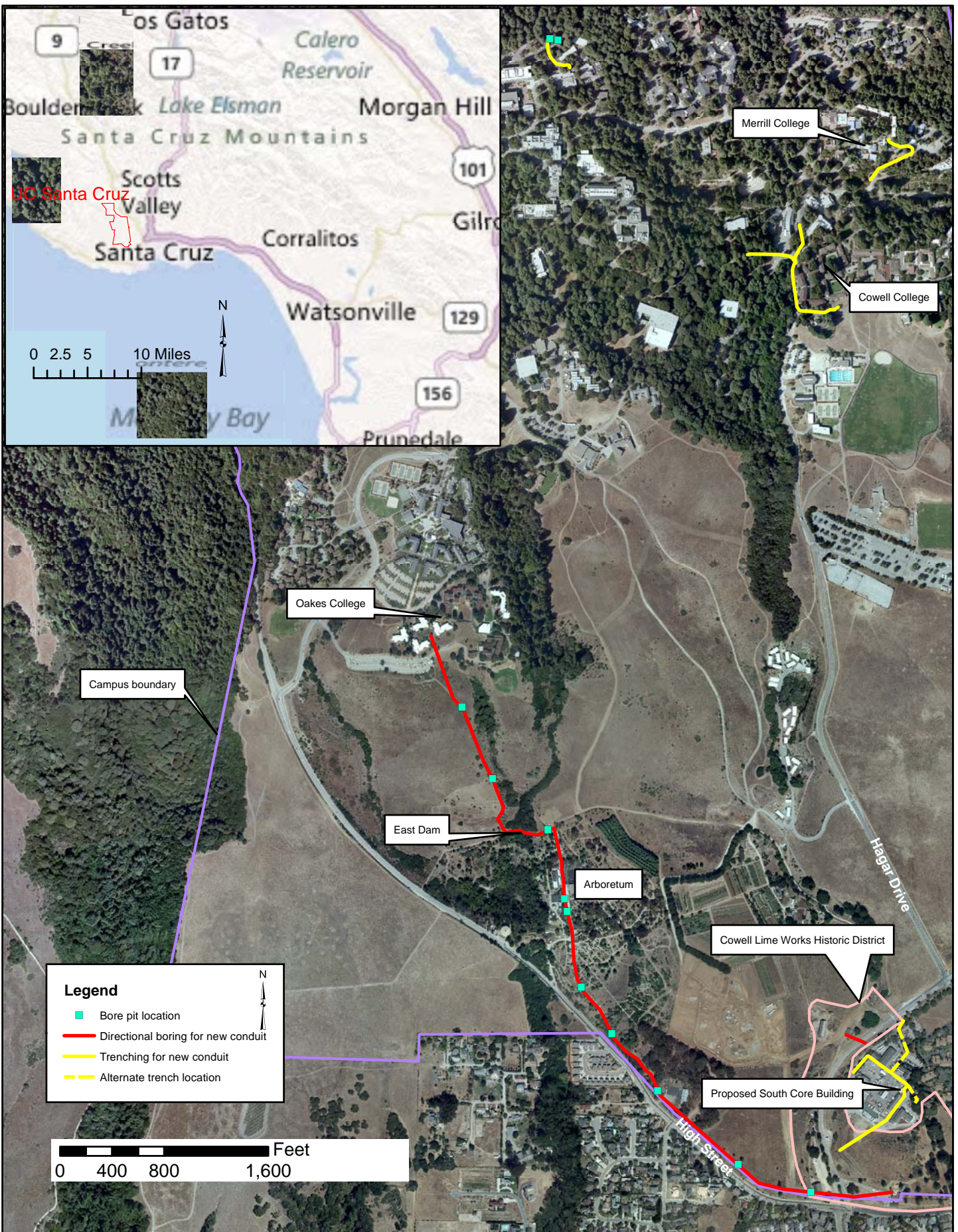


Figure 3-1: Project Location Map  
 UCSC Telecommunications Infrastructure Improvements Phase A  
 Draft Initial Study  
 October 2012



### 3.2 PROJECT OVERVIEW

Telecommunications Infrastructure Improvements (TII) Phase A Project consists of three major elements. First, the Project would construct interior telecommunications infrastructure upgrades and associated remodeling in 25 buildings in the central and western portions of the campus. Second, the Project would construct a new, redundant Minimum Point of Entry<sup>1</sup> (MPOE) in the south part of the campus to mirror the existing single MPOE in the Communications Building. The new MPOE would be housed in a new, 860-sf building in the Campus Facilities area in the southern campus. Several small garden storage sheds would be demolished to accommodate the new building. The third project element consists of upgrades to fiber optic and copper cable in existing conduit in between buildings in various locations on the campus, installation of cable in new conduit, and construction of telecommunications vaults along the new conduit. The Project would install a total of approximately 10,600 linear feet (lf) of new conduit. The new conduit would be installed primarily beneath existing paved and dirt roads, but some would be installed in grassland in the lower campus and the meadow north of the Arboretum. To the extent feasible, the new conduit would be installed using directional drilling methods<sup>2</sup>, but trenching would be required in areas where there are multiple existing utilities.

### 3.3 PROJECT BACKGROUND, NEED AND OBJECTIVES

The TII Phase A Project is the first of several planned phases of implementing a Telecommunications Master Plan for the UC Santa Cruz campus. The goal of the master plan is to achieve communications infrastructure modifications to support voice, data, video, and multimedia requirements throughout the campus through 2020. The campus has been divided into four geographic areas, grouped by each area's primary network routing hub. Each phase will construct upgrade telecommunications infrastructure in one of these areas, including augmentation of cable between buildings and upgrades to interior wire, telecommunication closets, and network equipment in State-owned buildings. In addition to addressing existing deficiencies, the upgrades would support 1 gigabit-per-second Ethernet service to the desktop, as well as additional wireless service expansion and conversion to Voice over IP technology, which provides network and voice services over a single wall jack.

Phase A would upgrade infrastructure to and within non-residential buildings in the four western colleges that are served by area distribution facilities (ADFs)<sup>3</sup> in College Eight and Porter College, and buildings in the western part of Science and Engineering Area that are served by the ADF in Thimann Laboratories. This phase also includes construction of a secondary telecommunications hub at the base of campus, in a new South Core Building, to ensure greater service reliability for the Campus' telecommunications network. New conduit and cables would be installed to link the new South core building to the existing

---

<sup>1</sup> Minimum point of entry is the point where ownership of telecommunications wires by the service provider ends and customer ownership begins.

<sup>2</sup> Directional drilling is a process of drilling horizontally under the ground surface for purposes of installing or replacing utilities. The drilling machine is connected to a high pressure pump that pumps a mixture of water and bentonite, and sometimes other solutions down the center of the drill rods to cool and lubricate the drilling head. The drill head under the ground has an electronic radio transmitter inside that radios back to the drill operator the drill head's exact location, depth below the surface, current pitch or slope, and other information. The steel drill rods are flexible and the drill head's path can be adjusted to go around and under obstacles. Upon reaching the objective, the new water line, gas line, electric wiring or a combination of these is attached to a back reamer. The drill operator will then drill backwards, opening up the hole as needed and simultaneously pulling the new service product along at the same time.

<sup>3</sup> ADF's serve as aggregators for the networking services delivered to their neighborhoods within the campus. They are intermediate service delivery points between the Core facilities at the Communications Building and the new South Core building, and the individual buildings on campus.

north core at the Communications Building. The Phase A project also includes some additional cabling to serve other parts of the campus. The Telecommunications Infrastructure Improvement Projects Phases B through D are currently in planning, with construction planned for 2014 through 2016. The facilities constructed under Phase A Project would function independently and improve the Campus' telecommunications service, even if the subsequent phases are delayed or ultimately not constructed.

### **3.4 PROJECT DISCRETIONARY APPROVALS**

Following the close of the public and agency comment period on this draft Initial Study on November 2, 2012, the University will prepare responses to all written comments that raise CEQA-related environmental issues regarding the project. The responses will be published in the Final Initial Study/Mitigated Negative Declaration (IS/MND). The Final IS/MND and approval of design of the Telecommunication Infrastructure Improvements Phase A Project is expected to be considered by the Chancellor of UC Santa Cruz through a delegation from The Regents. If the IS/MND is adopted, the Chancellor will consider approval of design for the Project. The Campus anticipates that the project will be considered for approval in March 2013.

### **3.5 CONSISTENCY WITH THE 2005 LRDP**

The proposed project is consistent with the scope of development projected in UCSC's 2005-2020 LRDP (UCSC 2006a) and analyzed in the 2005 LRDP EIR (UCSC 2006b). The Project would construct about 1,100 sf of new Institutional Support building space. The 2005 LRDP building program includes 144,000 gross square feet (gsf) of Institutional Support space; no new Institutional Support space has been approved or constructed under the 2005 LRDP. Therefore, the new building area added by the proposed Project would be consistent with the 2005 LRDP building program.

The 2005 LRDP anticipate that upgrades to both central telecommunications facilities and distribution channels would be required during the lifetime of the 2005 LRDP to increase for band width/density, reliability and flexibility of the telecommunications network, but does not specify potential locations of new facilities. The 2005 LRDP EIR did not analyze the specific environmental effects of construction of new telecommunications facilities, but stated that, like other utilities, new telecommunications lines would be in existing roads that are unlikely to have biological or cultural resources. Due to limited ground disturbance needed to install telecommunications lines, the LRDP EIR determined that air quality, noise, and other construction-phase impacts would generally be less than significant, or would be mitigated to less-than-significant levels by the implementation of mitigation measures identified in the LRDP EIR. Some of the new conduit that would be installed under the proposed Telecommunications Infrastructure Improvements Phase A Project would be outside of existing roads or other previously disturbed areas. The impacts of this construction are analyzed in Section 6, below. The locations of the new South Core building, the new conduit, and new utility vaults, are consistent with the applicable land use designations.

The land use designation of the Campus Facilities area where the new South Core Building would be constructed is designated as Campus Support in the 2005 LRDP. This land use designation accommodates a variety of public and operational functions of the campus. The South Core Building is consistent with this designation.

The project would upgrade service to existing buildings and therefore would not result in or support campus population growth. Sustainable design elements included in the project are detailed in Section 3.7, below.

### **3.6 DETAILED PROJECT DESCRIPTION**

#### **3.6.1 Relationship to the 2005 LRDP**

The Project is included in the planning area covered by the UCSC 2020 Long Range Development Plan (LRDP) and was not evaluated in the 2005 LRDP EIR. The campus routinely implements Mitigation

Measures identified in the LRDP that have been incorporated into standard planning, design, and construction practices. Those applicable to the proposed project have been incorporated into the project description to reduce or avoid environmental effects and to further reduce even those impacts identified in this Initial Study as less than significant. The relevant LRDP Mitigation Measures that have been incorporated into the project are discussed in each topical section below and are listed in Appendix B. Implementation of identified LRDP mitigation measures applicable to the Project are incorporated into the project description and their implementation is assumed for purposes of evaluating the impacts of the project.

### **3.6.2 Interior Infrastructure Upgrades**

The interior telecommunications infrastructure upgrades would consist of construction of new, remodeled, or expanded ADFs and telecommunications rooms in 28 buildings, and upgrades to communications wiring within buildings. The interior work would also include power, lighting, HVAC and fire protection upgrades and alterations to adjacent spaces that are triggered by the new or remodeled telecommunication rooms.

### **3.6.3 South Core Building/MPOE**

The proposed South Core Building would be sited in a developed area of the lower campus, adjacent to a Physical Plant storage building (Shop Stores) and service yard, and the driveway/parking area for the Emergency Response Center (ERC), which houses the UC Santa Cruz Police station (Figure 3-2). The new, 1,100-sf building would be approximately 22 feet tall. The height and the roof pitch would match those of the adjacent Shop Stores building. The new building would be occupied primarily by telecommunications equipment but a portion of the building would be reserved for Grounds Services storage to offset the loss of the garden sheds. Air-cooled condensers on a concrete housekeeping pad outside the building would provide air conditioning for the telecommunications equipment. A transformer would be accommodated on a separate pad. A new electrical line would be installed in a trench in the existing Emergency Response Center (ERC) driveway to connect the new building to the existing ERC generator. Construction would necessitate re-routing of sanitary sewer and gas lines that currently cross the building site, along the southwest end of the new building. New outdoor lighting would be provided at the building entrances.

### **3.6.4 Outside Cable**

The Project would install approximately 10,600 lf of new conduit among existing telecommunications facilities at various locations on the campus. The routes of the new conduit are shown on Figure 3-1. The longest run of new conduit would connect existing telecommunications facilities at the Granary at the southern end of the campus to existing facilities at Oakes College. This conduit run has been designed to follow existing paths and roads and previously disturbed land in the High Street right of way to the extent possible, with short segments in open grassland. Several shorter runs of new conduit would be installed in and around the Campus Facilities area in the lower campus to connect the new South Core MPOE with existing telecommunications facilities. One segment would cross the grassland southwest of the Emergency Response Center; other segments would be installed beneath existing pavement and other previously disturbed areas. In the northeastern portion of the developed campus, new conduit would be installed beneath existing paved roads in the vicinity of Cowell College and Quarry Plaza, and between McLaughlin Drive and Merrill College. North of the Central Heat Plant at the north end of the central campus, approximately 350 lf of conduit would be installed beneath a service road north of the Communications Building and in native soil between two buildings. At Porter College, a short segment of



Figure 3-2: Proposed South Core Building Location  
UCSC Telecommunications Infrastructure Improvements Phase A  
Draft Initial Study  
October 2012

new conduit would run from Porter Infill Apartment across an existing road to an existing telecommunications vault.

Directional boring methods would be used to install the conduit between the Granary and Oakes College, and for a short run across Coolidge Drive from the Blacksmith Shop in the lower campus. All other new conduit would be installed in trenches approximately 18 inches wide and 45 inches deep. Directional boring would involve excavation of entrance /receiving pits at intervals of no more than 600 feet. Each pit would be approximately 4 feet deep with an area of about 15 sf. Drilling fluid consisting of water with bentonite would be pumped continuously through the boring to facilitate removal of cuttings, stabilize the bore hole, cool the cutting head, and lubricate the passage of the conduit. New telecommunications vaults would be installed in the bore pits.

The Project also would clean out old cable, recondition, and pull new fiber optic and copper cable in existing conduit at various locations on the campus. Access to the existing conduit for this work would be from existing utility vaults and would not involve removal of vegetation, trenching, or other ground disturbance.

### **3.6.5 Utility Demand**

The Project would install new telecommunications equipment, lighting, and cooling systems. Taking into account the existing equipment that would be replaced by the Project, the Project would result in a net increase in power draw of 84.5 kW, including 38.0 kW in existing buildings and 46.5 kW at the new South Core building. The Project would not result in new water or natural gas use or wastewater discharge.

## **3.7 SUSTAINABLE DESIGN ELEMENTS**

Sustainability refers to principles of physical development, institutional operation, and organizational efficiency that meet the needs of present users without compromising the ability of future users to meet their needs—particularly with regard to the use of natural resources. Accordingly, the University of California has adopted the UC Policy on Sustainable Practices (formerly the Policy on Green Building, Clean Energy, and Sustainable Transportation).

The Sustainable Practices Policy (updated August 2011) recommends that university operations incorporate the principles of energy efficiency and sustainability in capital projects; minimize the use of non-renewable energy; incorporate alternative means of transportation to and from and within the campus; and continue to provide affordable on-campus housing to reduce commute volumes. To comply with the Sustainable Practices Policy, the Project must achieve a US Green Building Council LEED-NC certification of at least “Silver.”<sup>4</sup> The proposed Project includes the following sustainable design elements:

- The South Core building would be constructed of concrete blocks, which would reduce the need for cooling.
- The new telecommunications equipment selected by the Campus manages its power draw based on actual usage.
- Where feasible, the new and remodeled telecommunication rooms would be cooled with exhausted air and fresh air rather than air conditioning. Where air conditioning is necessary, high-efficiency split systems would be used.

---

<sup>4</sup>LEED-NC applies to new building and major renovations of existing buildings.

- All new lighting would be fluorescent or other high-efficiency lighting

### 3.8 POPULATION

The proposed Project would upgrade telecommunications service to existing facilities and therefore would not result in population growth.

### 3.9 CONSTRUCTION SCHEDULE AND STAGING

Construction is proposed to begin in April 2013, with completion in January 2014. Staging would be provided in existing paved parking lots and/or the existing construction staging area near the East Remote parking lot.

## 4 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"/> Agricultural Resources             | <input type="checkbox"/> Air Quality                           |
| <input type="checkbox"/> Biological Resources          | <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Geology, Soils & Seismicity           |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology & Water Quality          | <input type="checkbox"/> Land Use & Planning                   |
| <input type="checkbox"/> Mineral Resources             | <input type="checkbox"/> Noise                              | <input type="checkbox"/> Population & Housing                  |
| <input type="checkbox"/> Public Services               | <input type="checkbox"/> Recreation                         | <input type="checkbox"/> Transportation, Circulation & Parking |
| <input type="checkbox"/> Utilities/Service Systems     | <input type="checkbox"/> Mandatory Findings of Significance |  |

Based on the analysis presented in this Initial Study, it has been determined that for all resource areas, the proposed project would not result in any significant impacts that cannot be mitigated to a less-than-significant level. Please see the analyses below and refer to the Mitigated Negative Declaration (Appendix A to the Initial Study).

**5 DETERMINATION**

On the basis of this initial evaluation:

<input type="checkbox"/>	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
<input checked="" type="checkbox"/>	I find that although the proposed project could have a significant effect on the environment, the project impacts were adequately addressed in an earlier document or there will not be a significant effect in this case because revisions in the project have been made that will avoid or reduce any potential significant effects to a less than significant level. A MITIGATED NEGATIVE DECLARATION will be prepared.
<input type="checkbox"/>	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

*Sarah C. Latham*

*2/12/13*

Sarah C. Latham  
Vice Chancellor - Business and Administrative Services

Date

## 6 EVALUATION OF ENVIRONMENTAL IMPACTS

### Introduction

The following Environmental Checklist form is based on Appendix G of the CEQA Guidelines. The Environmental Checklist identifies potential project effects as corresponding to the following categories of impacts:

Potentially Significant Impact: There is substantial evidence that the effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.

Project Impact Adequately Addressed in LRDP EIR: The potential impacts of the proposed project were adequately addressed in the LRDP EIR and mitigation measures identified in the LRDP EIR will mitigate any impacts of the proposed project to the extent feasible. All applicable LRDP EIR mitigation measures are incorporated into the project as proposed. The impact analysis in this document summarizes and cross references the relevant analysis in the LRDP EIR.

Less than Significant with Project-Level Mitigation Incorporated: The incorporation of project-specific mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” All project-level mitigation measures must be described, including a brief explanation of how the measures reduce the effect to a less than significant level.

Less-than-Significant Impact: An effect for which no significant impacts, only less than significant impacts, would result. The effects may or may not have been discussed in the LRDP Program EIR. The project impact is less than significant without the incorporation of LRDP or Project-level mitigation.

No Impact: The project would not create an impact in the category or the category does not apply. “No Impact” answers need to be adequately supported by the information sources cited, which show that the impact 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).



## 6.1 AESTHETICS

AESTHETICS	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project Level Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project...					
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The only project element that has the potential for visual impacts, other than short-term impacts during construction, is the new South Core building. All other project elements would be constructed inside existing buildings or underground.

Aesthetics issues and programmatic mitigation measures applicable to LRDP development are described in Volume I, Section 4.1, of the 2005 LRDP EIR (UCSC 2006b). The following, previously adopted LRDP EIR mitigations for potential aesthetic impacts are applicable to and included in the project (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigation AES-5A (Design Advisory Board review of project design for consistency with the valued elements of the visual landscape identified in the 2005 LRDP EIR)

LRDP EIR Mitigation AES-6B (use of directional, shielded lighting to minimize light spillage and atmospheric light pollution)

LRDP EIR Mitigation AES-6C (Design Advisory Board review of project-related light and glare)

LRDP EIR Mitigation AES-6E (Design Advisory Board review of outdoor lighting fixtures to ensure the minimum amount of lighting is used)

a) Important vantage points from the lower campus looking across open space areas towards the central campus include points along Empire Grade Road, Glenn Coolidge Drive, and Hagar Drive. The campus is regarded by local residents as an important visual resource for the city because it provides an open backdrop for developed areas of western Santa Cruz. The lower campus grasslands and forest canopy of the upper campus are visible from various points throughout the city of Santa Cruz, including the wharf, the Boardwalk and Highway 1. The new South Core building is surrounded by a combination of larger existing buildings and trees and would not be visible from these on- or off-campus vantage points. For the same reason, the project site does not provide long-distance views. No impact would occur.

b) The project site is not visible from any scenic highways. The South Core building site is in the vicinity of the Cowell Lime Works Historic District, which is listed on the National Register of Historic Places for its importance to local and state history (see Figure 3-1). The building site is partly visible from the garden of the Cardiff House, which is a contributing feature to the historic district (Figure 6.1-1). The

new building would be taller than the existing garden sheds and a portion of the building would be partly visible through the trees (Figure 6.1-2). However, the existing view through the trees includes the Shop Stores building, which is the same height as the new building, and the roof of the Fleet Services garage, which is another barn-style structure on the west side of the equipment yard. The exterior of the new building is designed for consistency with the historic and modern barn-type structures surrounding the equipment yard. The appearance of the new building would be more consistent with the character of the historic district than the existing garden sheds, which are of a modern style. Therefore, the new building would not substantially degrade the view from the Cardiff House. No special landmarks or landforms, including rock outcrops, are present on the site. The proposed project would not affect any of the other scenic resources identified in the 2005 LRDP. The impact would be less than significant.

c) The South Core building site lies at the edge of the Campus Facilities area in the lower campus. The area to the northwest is used as an equipment yard. Consistent with LRDP Mitigation AES-5A, which is included in this project, the South Core building design was reviewed by the UCSC Design Advisory Board for consistency with the valued elements of the visual landscape identified in the 2005 LRDP. The existing garden sheds are surrounded by a chain-link fence on three sides, and the Shop Stores building on the southwest. With vines covering the fence on the northwest and tall shrubs on the northeast, the sheds are visible only from the ERC building and driveway on the southeast. The new building would be taller than the existing garden sheds and the shrubs on the northeast, but would be about the same height as the Shop Stores Building. The fence and vines would be removed, so the South Core building would be visible from the equipment yard on the northwest as well as from the ERC building and driveway. However, as described above, the new building would be similar in appearance to other existing buildings in the area; the Project would not degrade the visual character or quality of the area, and the impact would be less than significant. Additional mitigation is not required.

d) New outdoor lighting would be limited to the building entrances. Consistent with LRDP Mitigation AES-6B and -6E and Campus Standards the project lighting would be designed to be directional and shielded and the project includes only the minimal amount of new exterior lighting needed for safety. Potential for glare. With the inclusion of the design features described above, the project would not result in significant new light or glare.

### **Summary**

2005 LRDP EIR mitigations AES-5A, AES-6B, AES-6C, and AES-6E are applicable to and incorporated into the project design. The project would not result in any significant aesthetic impacts. No project-level mitigation is required.



Figure 6.1-1: View of South Core Building Site from Cardiff House Lawn, Existing Conditions  
UCSC Telecommunications Infrastructure Improvements Phase A  
October 2012



Shop Stores Building

Proposed new South Core Building

09/08/2012

Figure 6.1-2: View of South Core Building Site from Cardiff House Lawn, With Project UCSC Telecommunications Infrastructure Improvements Phase A  
October 2012

## 6.2 AGRICULTURAL RESOURCES

AGRICULTURAL RESOURCES	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
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 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 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 in Public Resources Code 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<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 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 type="checkbox"/>	<input checked="" type="checkbox"/>

Agricultural Resources materials background relevant to LRDP development is presented in Volume I, Section 4.2, of the 2005 LRDP EIR (UCSC 2006b).

a) As State lands, campus lands are not eligible for Williamson Act agreements, nor are they subject to local zoning controls. Therefore, projects on campus lands have no potential conflict with existing zoning for agricultural use or a Williamson Act contract. Based on the Important Farmland map produced by the California Department of Conservation, Division of Land Resource Protection under the FMMP, the proposed project site is not designated as Prime Farmland, Unique Farmland or Farmland of Statewide Importance. Furthermore, the project would not alter the land use of the site. Therefore, the project would not convert farmland to a non-agricultural use.

b) There are no lands within 1-mile radius of the campus that are designated Important Farmland; most of the land adjoining the campus is within state or city parks and unlikely to be developed for other uses, and there are no ongoing agricultural operations on any of the lands that adjoin the campus. The project would not result in an increase in population that could contribute to the demand for housing and associated development in the region. Therefore, the project would not result in the conversion of farmland to non-agricultural uses.

c,d) The project site is not forest land as defined in Public Resources Code Section 12220(g), it is not zoned Timberland Production, and no trees would be removed. No impact would occur.

e) There are no lands within 1-mile radius of the campus that are designated Important Farmland; most of the land adjoining the campus is within state or city parks and unlikely to be developed for other uses, and there are no ongoing agricultural or timber operations on any of the lands that adjoin the campus. As discussed in Section 6.13, *Population and Housing*, the project would not result in an increase in population that could contribute to the demand for housing and associated development in the region. Therefore, the project would not result in the conversion of farmland to non-agricultural uses or conversion of forest land to non-forest use.

**Summary**

The project would not result in any impacts on agricultural or forestry resources.

### 6.3 AIR QUALITY

AIR QUALITY	Potentially Significant Impact	Project Impact Adequately Addressed in the LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project...					
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Air quality issues and programmatic mitigation measures applicable to LRDP development are described in Volume I, Section 4.3, of the 2005 LRDP EIR (UCSC 2006b). The following, previously adopted LRDP EIR mitigations for potential air quality impacts are applicable to and included in the project (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigation AIR-1 (construction dust control measures)

LRDP EIR Mitigation AIR-6 (measures to minimize construction emissions of toxic air contaminants)

#### a-d) Air Quality Management Plan Consistency

According to the Monterey Bay Unified Air Pollution Control District (MBUAPCD) CEQA Air Quality Guidelines (MBUAPCD 2008), a project that is consistent with the Air Quality Management Plan (AQMP) is considered to be accommodated in the AQMP and therefore would not have a significant impact on regional air quality. The AQMP for the MPUAPCD (the air district in which UCSC is located) is based on population and housing forecasts prepared by the Association of Monterey Bay Area Governments (AMBAG). The proposed project would not result in an increase in population or housing, or result in a growth in employment that could trigger population increase and therefore would not conflict with the AQMP. No impact would occur.

#### Construction Emissions

##### Criteria Pollutants

Construction of the proposed project would involve use of equipment and materials that would temporarily generate dust (including PM<sub>10</sub>) and emit ozone precursor emissions (i.e., ROG and NO<sub>x</sub>). The proposed project will disturb a total of approximately 0.25 acre for installation of new conduit, and grading and utility installation for construction of the new South Core building. Dust associated with the proposed project could cumulate with fugitive dust from the other projects during the periods of

concurrent construction. The proposed project also would generate other criteria pollutants from the operation of heavy equipment construction machinery (primarily diesel-fueled) and construction worker automobile trips (primarily gasoline-fueled). Construction-related dust emissions would vary from day to day and would depend on the level and type of activity, silt content of the soil, and the weather. Construction activities could result in temporary local increases in dust and PM<sub>10</sub> concentrations, and as a result local visibility could be adversely affected on a temporary basis during the construction period. In addition, larger dust particles could settle out of the atmosphere close to the construction site resulting in a potential soiling nuisance for adjacent uses.

The MBUAPCD does not require specific consideration and estimation of emissions from construction activities using typical construction equipment, except for PM<sub>10</sub>. Construction related VOC and NO<sub>x</sub> emissions are accommodated in the emissions inventories of State- and federally-required air quality plans and therefore are not considered significant. The MBUAPCD's CEQA Guidelines establish a threshold of significance for PM<sub>10</sub> related construction emissions of 82 pounds per day, and provide the following screening level thresholds: projects with less than 2.2 acres per day of major earth moving such as grading or excavation, or 8.1 acres per day with minimal earth moving are assumed to be below the significance threshold of 82 pounds per day (MBUAPCD 2008). Construction PM<sub>10</sub> emissions for the proposed Project were estimated at 0.84 pounds per day, using the CalEEMod air quality emissions model.<sup>5</sup> Emissions from demolition of the existing garden sheds were taken into account in the CalEEMod analysis. One other project planned for construction during the summer of 2013, the Infrastructure Improvements Project Phase 2 (IIP 2), may involve grading concurrent with trenching, directional boring or grading for the Proposed TII Phase A Project. The IIP 2 Project could involve up to 0.9 acre of major earthmoving and 0.9 acre of minor grading in a single day.<sup>6</sup> Using the MBUAPCD's guidelines (38 lbs/acre/day for earthmoving or major grading and 10 lbs/acre/day for minor grading), the IIP 2 Project would result in PM<sub>10</sub> emissions of up to 35.1 pounds per day. The TII Phase A Project and the IIP 2 Project cumulatively could result in up to 36 pounds per day, which would not exceed the MBUAPCD threshold. Furthermore, LRDP Mitigation AIR-1, which requires specific contract requirements designed to minimize construction fugitive dust, is applicable to and included in both projects. These require that the contractor implement dust control measures recommended by the MBUAPCD to reduce PM<sub>10</sub> generated by utility trenching or by demolition. The project incorporates and will implement this previously adopted LRDP mitigation to further reduce the less than significant impact of the project with respect to construction emissions of PM<sub>10</sub>. Demolition of the existing buildings is also subject to MBUAPCD Rule 439, which limits particulate emissions from the removal of buildings through the application of measures specified in the rule. Compliance with MBUAPCD regulations is specifically required by the Campus' contract documents.

### **Operational Emissions**

The proposed project would not result in an increase in stationary or mobile sources of emissions of criteria air pollutants.

- e) The project would not generate any objectionable odors and no impact would occur.

---

<sup>5</sup> Available online at: <http://www.caleemod.com>.

<sup>6</sup> University of California, Santa Cruz. 2008. Infrastructure Improvements, Phase 2, Final Initial Study and Mitigated Negative Declaration, SCH # 2008052110.



**Summary**

The proposed project would not result in any significant or potentially significant air quality impacts. The project includes 2005 LRDP EIR Mitigations LRDP AIR-1 and AIR-6, which further reduce the less-than-significant construction air quality impacts of the project. No project-specific mitigation is required.

## 6.4 BIOLOGICAL RESOURCES

BIOLOGICAL RESOURCES	Potentially Significant Impact	Project Impact Adequately Addressed in the LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project...					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>	<input type="checkbox"/>

Biological resources issues and programmatic mitigation measures applicable to LRDP development are described in Volume I, Section 4.4, of the 2005 LRDP EIR (UCSC 2006b). The following, previously adopted LRDP EIR mitigations for potential impacts to biological resources are applicable to and included in the project (the full text of the mitigation measures is included in Appendix B):

BIO-6 (measures to avoid or minimize the potential to introduce or spread noxious weeds or plant diseases)

BIO-9 (preconstruction monitoring for and avoidance of California red-legged frog)

BIO-11 (preconstruction monitoring for and avoidance of nesting special-status birds)

BIO-12A-B (preconstruction monitoring for and avoidance of western burrowing owl)

a) The new South Core building and utility lines serving the new building would be constructed within a developed area of the campus and adjacent to an active equipment storage yard. Construction of the new building, as well as the telecommunications infrastructure improvements that would be made to existing buildings, and trenching in existing paved roads in the central campus would not impact special-status plants or wildlife or sensitive habitat. A biotic assessment of natural areas that would be disturbed by trenching and directional boring for conduit installation was conducted in summer 2012. The assessment included mapping of habitats and evaluation for the potential presence of special-status plant and wildlife species and sensitive habitats (Biosearch Associates, 2012). The study area for the biotic assessment included the ten proposed bore pit locations and proposed trench alignment in the southern and western parts of the campus and a 50-foot buffer around these areas (Figure 6.4-1).

### **Special-Status Plants**

The biotic assessment identified five habitats within the study area: Non-native Grassland, Coyote Brush Scrub, Ruderal, Eucalyptus Forest, and Developed/Landscaped. There are no documented occurrences of special-status plant species on the study area, and no special-status plants have been identified on or adjacent to the study area during previous studies. No special-status plant species were observed during the August 2012 field visits, but the field visits occurred outside the typical blooming period of most plant species, and focused surveys were not conducted. Three special-status plants could potentially occur in Non-native Grassland in the study area: bent-flowered fiddleneck (*Amsinckia lunaris*) and marsh microseris (*Microseris paludosa*), which are both on the California Native Plant Society (CNPS) List 1B.2; and San Francisco popcornflower (*Plagiobothrys diffusus*), which is on the State list of endangered species and on CNPS List 1B.1.<sup>7</sup> The likelihood that these plants are present on the site is low, but the presence or absence of these species can't be definitively determined without a field visit conducted during the spring blooming period. If special-status plants are present on the study area, they could be adversely impacted by ground disturbance associated with the project, including mortality of individuals by crushing or habitat destruction. Although the potential that these plants occur in the Project area is very low, this would be a potentially significant impact. The impact would be reduced to a less-than-significant level with implementation of TII Phase A Mitigation BIO-1.

**TII Phase A Mitigation BIO-1.** A qualified botanist shall conduct a focused plant survey for target special-status species within 50 feet of ground disturbance in suitable Non-Native Grassland during the spring blooming period prior to construction. If no special-status species are observed during the focused survey, no additional mitigation is necessary. If special-status plants are observed, the population shall be mapped and quantified and a suitable buffer zone (based on species requirements, proximity to the work area and other site specific factors) established, along with other protection measures, such as fencing installed around the population to protect it from disturbance. Any bore pit or trench that is within the buffer shall be moved to a location outside the buffer.

### **Special-Status Wildlife**

Some of the study area is relatively undisturbed and provides suitable habitat for wildlife, especially those sites situated near the Moore Creek drainage and in proximity to the Arboretum Pond. Other portions of the study area are heavily disturbed and surrounded by development, and generally lack suitable habitat

---

<sup>7</sup> Plant species on CNPS List 1B are rare, threatened, or endangered in California and elsewhere. Plants on CNPS List 1B.1 are seriously endangered in California; those on List 1B.2 are fairly endangered in California.

for most special-status wildlife species known from the UCSC campus and surrounding region. Thirteen special-status wildlife species have the potential to occur on or immediately adjacent to the study area: Ohlone tiger beetle (*Cicindela ohlone*), monarch butterfly (*Danaus plexippus*), California red-legged frog (*Rana draytonii*), western pond turtle (*Emys marmorata*), white-tailed kite (*Elanus leucurus*), burrowing owl (*Athene cunicularia*), grasshopper sparrow (*Ammodramus savannarum*), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), Allen's hummingbird (*Selasphorus sasin*), olive-sided flycatcher (*Contopus cooperi*), oak titmouse (*Baeolophus inornatus*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), and American badger (*Taxidea taxus*). In addition, trees and shrubs on the study area provide nesting habitat for non-listed bird species protected under the Migratory Bird Treaty Act (MBTA) and state Fish and Game Codes.

**Ohlone tiger beetle.** Ohlone tiger beetle (OTB), a federally listed endangered species, is known to occur on the southwestern portion of the UCSC campus, south of Empire Grade Road, and at Marshall Field in the upper campus. The species utilizes barren or sparsely vegetated ground, usually in level areas, and the soils at all known OTB sites belong to the Watsonville loam series, but recent mapping indicates that the species may be present at sites with other, similar soils. Watsonville loam soils, or soils where Watsonville loam are a component, have been mapped on or the project locations identified as 2, 3, 4, 5 and 11 on Figure 6.4-1. Project construction at these locations is planned for the summer months, when adults of this species are not active but larvae are alive and active in burrows in the top few inches of soil. The Project's permanent effect on potential OTB habitat would be limited to the new underground utility vaults, which would not be a significant adverse effect on the species.

Outside the immediate vicinity of the bore pits, the bore holes would be at least 3 feet deep, below the depth of OTB larval burrows. The drilling fluid that is used for directional boring contains bentonite or a polymer that increases the viscosity of the fluid such that it forms a cake around the borehole rather than infiltrating into the adjacent soil. There is a potential for drilling fluid to seep into the soils surrounding the borehole and to the ground surface during drilling, if there are vertical cracks or other voids in the soil, or when layers of loose sand, gravel, or fractured rock are encountered and drilling fluid fills voids in the material. This process is known as a "frac-out." In a typical 4-inch bore hole, drilling fluid will be pumped at about 10 gallons per minute. At this rate, a frac-out may result in a pool of 10 to 20 gallons before it is detected. The potential for frac-out is reduced by increasing the depth of the boring and by pre-reaming a slightly larger hole to reduce the amount of drilling fluid necessary to pull the duct back through. The standard procedures for frac-outs are to vacuum up the spilled fluid as soon as it is discovered.

If OTB larvae are present in or near areas that would be disturbed for bore pits or trenching, then excavation, operation of heavy equipment, or release of drilling fluid to the ground surface could harm or otherwise disturb larvae. A frac-out could also result in drilling fluid flowing into larval burrows from below or from the ground surface. This would be a potentially significant impact. The impact would be reduced to a less-than-significant level with implementation of TII Phase A Mitigations BIO-2 and BIO-3, which require pre-construction surveys for adult beetles and larvae, implementation of avoidance measures if OTB are found to occupy areas that would be disturbed for construction, and measures to prevent and clean up frac-outs. As discussed in Section 6.9, *Hydrology and Water Quality*, TII Mitigation BIO-3 would also reduce potential construction impacts to water quality and therefore would be implemented whether or not OTB are observed in the project area during the spring survey.

If OTB are present near one or more of the bore pit locations, the pit location(s) can be moved as long as the pits are no more than about 600 feet apart. The OTB larval burrows often co-occur as clusters of burrows in small patches of their prairie habitat, rather than spreading out widely over a large area, so it should be possible to site pit locations that avoid any burrows that are present. No special-status species other than those that could occur in the project area are known to exist along the conduit alignment or in

the grassland area surrounding the trench identified as #11 on Figure 6.4-1. As discussed elsewhere in this section, TII Mitigations BIO-1, BIO-4A BIO-4B, BIO-5, and BIO-6, and LRDP Mitigations BIO11, BIO-12A, and BIO-12B would apply to any proposed new areas of disturbance, and would reduce the biological resources impacts to a less-than-significant level. Therefore, implementation of TII Phase A Mitigation BIO-2 would not result in any significant environmental impacts other than those analyzed in this Initial Study.

**TII Phase A Mitigation BIO-2.** Prior to construction, during the late spring, when larval burrows are apparent and late-season adult beetles may still be active, a qualified biologist shall conduct a survey for OTB in the proposed work areas. The survey shall include bore pit locations and trench and directional drilling alignments within potential OTB habitat. If any burrows are detected, one or more of the following additional measures would be implemented, in consultation with a qualified biologist and USFWS:

- The trench or bore pit location will be moved to a location where construction activity would not affect OTB;
- Construction fencing will be installed around the new work area to ensure that equipment does not encroach on areas occupied by OTB;
- A qualified biologist will monitor surface disturbance;
- The depth of the borehole will be increased

Alternatively, the Campus may implement one or more other measures that would achieve the same result, if recommended by the USFWS.

**TII Phase Mitigation BIO-3.** The following measures will be taken to prevent release of drilling fluid to the environment:

- Excess drilling fluids shall be contained at entry and exit points until they are recycled or removed from the site or vacuumed during drilling operations. Ensure that entry and exit pits are of sufficient size to contain the expected return of drilling fluids and soil cuttings.
- Secondary containment of the pits shall be provided to contain any seepage and minimize any migration of the mud from the work area. This containment system may consist of straw bales and silt fencing around the pit.
- To determine if an inadvertent release has occurred, horizontal directional drilling activities will constantly be monitored on this project, through visual inspection of the drill path and continuous examination of drilling mud pressure.
- Should a frac-out occur, drilling shall halt immediately and the spilled material will be collected using a vacuum pump or other equipment. The Contractor will determine and implement any modifications to the drilling technique, including deepening the bore path, adjusting the alignment, or altering the composition of drilling fluid (e.g. thickening of mud by increasing bentonite content) to minimize or prevent further releases of drilling mud.

***Monarch butterfly.*** Monarch butterflies, whose winter roost sites are considered sensitive habitats by the California Department of Fish and Game (CDFG), are known to overwinter in the Arboretum eucalyptus

grove. One of the proposed bore pit locations (#3 on Figure 6.4-1) is located in the vicinity of a stand of eucalyptus forest. However, the site is located on the edge of the stand near Empire Grade Road, the project site is located outside of the forest edge, and no trees are anticipated to be impacted by the project. Since eucalyptus trees will not be impacted by the project, and since monarchs do not appear to be sensitive to noise, movement, or visual intrusion from nearby, no significant adverse impacts to monarch butterflies or their habitat are anticipated by the proposed project, and no mitigation measures are required.

**California red-legged frog.** The California red-legged frog (CRLF), a federally listed threatened species and a State Species of Special Concern, has been documented in Moore Creek and breeds at the Arboretum Pond. The species is regularly observed in upland areas throughout the Arboretum. The study area does not provide aquatic habitat for CRLF, but several of the proposed bore pit locations (4 through 10 on Figure 6.4-1) are in areas that could serve as a movement corridor for CRLF dispersing from the Arboretum Pond and Moore Creek drainage.

The 2005 LRDP EIR (LRDP Impact BIO-9) determined that impacts of development under the 2005 LRDP on CRLF would be potentially significant, but would be reduced to a less-than-significant level with implementation of LRDP Mitigation BIO-9. This mitigation, which is included in the proposed project, requires that, if feasible, ground-disturbing construction should take place outside the rainy season in the Moore Creek watershed. LRDP Mitigation BIO-9 also provides requirements to be taken if construction occurs during the rainy season (between October 15 and May 15), including pre-construction and daily monitoring and consultation with USFWS to initiate additional protective measures. Consistent with LRDP Mitigation BIO-9, construction in the Moore Creek watershed is planned for the dry season, when the frogs are rarely found more than about 300 feet from water. However, some of the proposed bore pit locations are located within 300 feet of Moore Creek or the Arboretum Pond. Therefore, even with implementation of LRDP Mitigation BIO-9, construction in these locations could result in mortality of individual CRLF. This is a potentially significant impact. Implementation of TII Phase A Mitigations BIO-4A and BIO-4B would ensure that the Project would not result in take of CRLF and would reduce the impact to a less-than-significant level. Consistent with LRDP Mitigation BIO-9, the Campus has initiated consultation with USFWS and will modify these mitigations as recommended by USFWS staff.

**TII Phase A Mitigation BIO-4A:** Initial ground disturbance within 300 feet of Moore Creek and the Arboretum Pond will take place between May 1 and October 15 and shall not occur when it is raining.

**TII Phase A Mitigation BIO-4B:** When work will take place within 300 feet of Moore Creek or the Arboretum Pond, a qualified biologist will perform the following tasks:

- (1) A qualified biologist shall inspect the project site before ground disturbance and during any initial vegetation, woody debris, tree removal, or other initial ground-disturbing activities;
- (2) Following vegetation removal, frog exclusion fence shall be constructed around the entire work area. Three-foot nylon construction silt-fencing or similar material shall be buried a minimum of 6 inches and extend a minimum of 2.5 feet above grade. The fencing material shall be maintained such that it is vertical without any sagging, and it shall completely enclose the work area; additional wooden stakes shall be used as needed. If construction personnel must remove a portion of the fencing during the work day for access, it shall be replaced prior to nightfall. Construction and maintenance of the fence shall be monitored by a qualified biologist;

(3) A qualified biologist shall inspect each work area daily prior to construction. If a CRLF is observed at any time before or during project activities, all activities will cease at that location until the qualified biologist determines that the species has departed; no CRLF shall be handled or relocated.

**Western pond turtle.** The western pond turtle (WPT), a State Species of Special Concern, has been documented in the Arboretum pond and in Moore Creek drainage south of the UCSC campus. The project study area lacks aquatic habitat for the species, but Non-Native Grassland in the vicinity of the Arboretum pond (including the areas surrounding project locations 8, 9, and 10) could provide nesting habitat for the species. If nests are present within areas that will be disturbed by construction, eggs or hatchlings could be lost.

The 2005 LRDP EIR (Vol. 1, p. 4-55) analyzed the potential impacts of development under the 2005 LRDP on WPT. According to the LRDP EIR, turtles have not been observed in Moore Creek or at the Arboretum since 1992. Only minimal development, limited to the existing Arboretum footprint, is envisioned for the lower Moore Creek watershed under the 2005 LRDP, and the basic hydrologic function of the pond would not be altered. Therefore, the EIR determined that development under the 2005 LRDP would not result in significant impacts to WPT. However, due to the proximity of some of the proposed bore pit locations to Moore Creek or the Arboretum Pond, if WPT is nesting in the vicinity, the Project could result in disturbance of nests, which is a potentially significant impact. Implementation of TII Phase A Mitigation BIO-4 would reduce this impact to a less-than-significant level.

**TII Phase A Mitigation BIO-5:** Prior to ground disturbing activities at project sites 8-10, a qualified biologist will inspect the work area and land within 50 feet for evidence of WPT nesting. If a nest is found, CDFG will be contacted for guidance on establishing an appropriate buffer or other measures to avoid disturbance of the nest.

**Burrowing owl.** Burrowing owl, a State Species of Special Concern, has been known to overwinter on grassland on the campus, including the area southwest of Empire Grade Road, and the meadow east of Hagar Drive. Suitable habitat is present in Non-native Grassland habitat in the study area, particularly in the vicinity of locations 8, 9, and 10 (Figure 6.4-1). If adult western burrowing owls are occupying a burrow within a work area that will be disturbed during construction, project construction could result in injury or death to individual owls.

The 2005 LRDP EIR (Impact BIO-12) determined that development under the 2005 LRDP would not result in significant impacts to western burrowing owl. The USFWS has officially recognized that no burrowing owl breeding occurs in Santa Cruz County, and no western burrowing owl breeding pairs have been documented on campus since the early 1980s. The UC Santa Cruz western burrowing owl population is one of very few known populations in Santa Cruz County, and consists primarily of a small overwintering population spread across several grassland areas. While individuals and nest sites are protected under the MBTA, wintering habitat is not. Thus, potential impacts to burrowing owl due to future construction proposed under the 2005 LRDP are considered less than significant, and no mitigation is required. However, the 2005 LRDP EIR identified LRDP Mitigations BIO-12A and BIO-12B to further reduce this less-than-significant impact in the event that burrowing owls establish nests on the campus lands in the future, and would also protect over-wintering owls. The impact of the proposed Project would not exceed that analyzed in the 2005 LRDP EIR and therefore would be less than significant. The LRDP EIR Mitigations BIO-12A and BIO-12B are applicable to and included in the Project to ensure that construction does not harm or kill overwintering owls, which would further reduce the less-than-significant impact to this species.

***Nesting special-status birds.*** Nesting habitat is present for white-tailed kite, grasshopper sparrow, Bryant's savannah sparrow, Allen's hummingbird, olive-sided flycatcher, oak titmouse and several native bird species in trees, shrubs, and herbaceous vegetation on the study area, although extensive human disturbance at some sites reduces habitat quality. Vegetation removal, as well as noise and other disturbance during project implementation, could adversely impact nesting bird species, if present, potentially resulting in nest destruction or abandonment.

**Grasshopper sparrow** is considered to be a fairly common regular breeder in Santa Cruz County and 4-6 pairs generally breed on the Moore Creek Preserve situated less about 1-1.5 miles south of the study area. The species is generally associated with short to middle-height grasslands and little to no shrub cover, and can also be found in pastures and certain agricultural fields. Appropriate habitat is present in the grassland habitat at project location 10 and near project location 9. Low quality habitat is present in the grassland at study area 11, where much of the grass is tall and dense.

**White-tailed kite**, listed as a federal Bird of Conservation Concern by the USFWS and as a Fully Protected Species by the CDFG, are considered to be uncommon breeders in Santa Cruz County. The species nested on campus property in May 2004 and has also been known to nest in the Pogonip City Park east of UCSC. The species is expected to be observed foraging in proximity to the study areas. Potential nesting habitat is present along the Moore Creek drainage and in portions of the Arboretum. White-tailed kites generally avoid nesting in proximity to regular human activity.

**Bryant's savannah sparrow**, which is designated as a Species of Special Concern by CDFG, is considered to be an uncommon but regular breeder in localized areas of Santa Cruz County. About a dozen pairs typically nest at the Moore Creek Preserve, which is situated less about 1-1.5 miles south of the study area. Appropriate habitat is available in the grasslands at project location 10 and near project location 9 but the dense, homogenous thatch at study area 11 reduces habitat quality.

**Allen's hummingbird**, which was recently added to the federal Birds of Conservation Concern, primarily due to its restricted breeding range, is a common breeding species in Santa Cruz County. Potential nesting habitat is present in the vicinity of the study area, along the Moore Creek drainage and in the Arboretum.

**Olive-sided flycatcher**, which is designated as a Species of Special Concern by CDFG and a Bird of Conservation Concern by USFWS is a fairly common breeding species in appropriate habitats in Santa Cruz County. Potential nesting habitat is present in the Eucalyptus grove at project location 3 and near project location 4.

**Oak titmouse**, which was recently added to the federal Birds of Conservation Concern primarily due to its restricted breeding range, is a fairly common breeding species in appropriate habitats in Santa Cruz County. Potential nesting habitat is present in the study area, in proximity to the Moore Creek drainage and in the Arboretum.

**Other migratory birds.** Suitable nesting habitat for non-listed bird species that are protected under the Migratory Bird Treaty Act occurs in trees, shrubs, and herbaceous vegetation on the study area, although extensive human disturbance reduces the likelihood of nesting. The MBTA regulates or prohibits taking, killing, and possession of migratory bird species and their nests as listed in Title 50 Code of Federal Regulation (CFR) Section 10.13. Bird species and their nests are also protected under Sections 3515 and 3503 of the state Fish and Game Code.

Vegetation removal, as well as noise and other disturbance during project implementation, could adversely impact the nesting bird species listed above, if present, potentially resulting in nest destruction or abandonment. The 2005 LRDP EIR (p. 4.4-58) analyzed the potential that development under the 2005



LRDP could result in significant impacts to special-status birds, and concluded that the loss or abandonment of active nests of special-status bird species as a result of construction activities and construction-related noise would be a potentially significant impact. The EIR determined that the impact would be reduced to a less-than-significant level with implementation of LRDP Mitigation BIO-11. Previously adopted LRDP Mitigation BIO-11 is applicable to and incorporated into the TII Phase A Project. The Project is within the scope of development analyzed in the 2005 LRDP EIR, and the Project would not result in impacts on special-status bird species that exceed those identified in the EIR. With implementation of LRDP Mitigation BIO-11, the Project would not result in a significant impact on special-status birds and no additional mitigation is required.

***American badger.*** Suitable habitat for the American badger, which is a State Species of Special Concern, occurs in Non-Native Grassland habitat in and near project locations 8-11. The species generally avoids areas of increased human activity. Trenching or boring at den sites could result in badger mortality and construction activity could affect individuals that have dens nearby.

The 2005 LRDP EIR (Vol 4, p. 3-14) determined that development under the 2005 LRDP would not have an impact on the American badger. At that time, the only recent known occurrence at UC Santa Cruz was the discovery of a single skull and partially attached neck tissues discovered near the East Remote parking lot in 2004, and the only documented occurrence of a living American badger in Santa Cruz County was 4 miles northwest of Santa Cruz in 1983. Thus, it appeared that the badger was, at most, an infrequent resident of or occasional migrant through the campus. More recently, it has been established that badgers are present near the campus, in Wilder Ranch State Park, which makes it appear more likely that badgers could occupy dens in suitable habitat on the campus, although a live badger has not been sited on the campus in at least 12 years (Lay, 2012). Implementation of TII Phase A Mitigation BIO-5 would ensure that project construction does not disturb badgers, and reduce impacts to this species to a less-than-significant level.

**TII Phase A Mitigation BIO-56:** Prior to project construction, a qualified biologist shall inspect the project work area and adjacent areas within 100 feet for badger dens. If an occupied den is located, the bore or trench site shall be relocated to avoid impacts to the den by a minimum of 100 feet.

***San Francisco dusky-footed woodrat. LRDP mitigation.*** The San Francisco dusky-footed woodrat, which is a State Species of Special Concern, occurs from San Francisco Bay south through the Santa Cruz Mountains to Elkhorn Slough and inland to the Diablo Range and is most common in riparian, oak woodland and scrub habitats. During the survey conducted for the project biotic assessment, woodrat houses were observed in the Moore Creek riparian corridor near project location 8. While suitable habitat for woodrats is present in the vicinity of project locations 8 and 9 where scrub is present, the proposed areas of disturbance are generally located in herbaceous vegetation that is not suitable for woodrat houses. No significant adverse impacts to woodrats are anticipated from the proposed project, and no mitigation measures are required.

b,c) No sensitive habitats were observed on the study area. A potentially jurisdictional tributary of Moore Creek drains southbound near study area 9. The project site in this area is located on an existing dirt road well-above the top of bank of the drainage and outside of regulatory jurisdiction.

d) Portions of the study area—particularly in the vicinity of project locations 8, 9, and 10—occur in an area that is regularly used by wildlife that frequent the Moore Creek riparian corridor. However, the project would consist of a relatively small area of temporary ground disturbance, with no new above-ground structures or habitat conversion anticipated. Therefore, the project is not expected to have any significant adverse impacts on wildlife movement and no mitigation measures are required.

e) The proposed project is consistent with the policies of the 2005 LRDP with respect to biological resources. No other biological resources policies or ordinances are applicable. No impact would occur.

f) One segment of proposed conduit that would be installed with directional drilling would run parallel to boundary of the Inclusion Area D Preserve, which was created by the University pursuant to the 2005 Implementing Agreement for the Ranch View Terrace Habitat Conservation Plan (HCP). The Preserve is managed by the Campus to benefit OTB and CRLF habitat as mitigation for potential take of these species as a result of the development of two development projects in the southwestern part of the campus. As shown on Figure 6.4-2, 5.7 acres of the Preserve is designated as an OTB Management Area. The underlying soils in this area is classified as Tierra-Watsonville complex, which is correlated with the presence of OTB. However, the dense build-up of thatch on the soil surface has apparently prevented OTB from colonizing the area. The goal of the management of the OTB Management Area is to create suitable OTB habitat based on vegetation characteristics, although it is not certain whether the site can actually support OTB. The goal is to be accomplished by reducing the amount of thatch and standing dead vegetation, providing bare areas suitable for OTB, decreasing the density and diversity of non-native grass and herb species, and increasing the diversity of native grasses and herbs. OTB have not been observed in the Preserve during HCP monitoring through 2011. Current management strategies under the HCP consist of cattle grazing and mechanical ground scraping to increase bare ground. The remaining 6.8 acres of the Preserve are managed to benefit CRLF as temporary foraging and movement habitat. Currently, cattle grazing, to increase the diversity of native grasses and herbs is the only management strategy in that area.

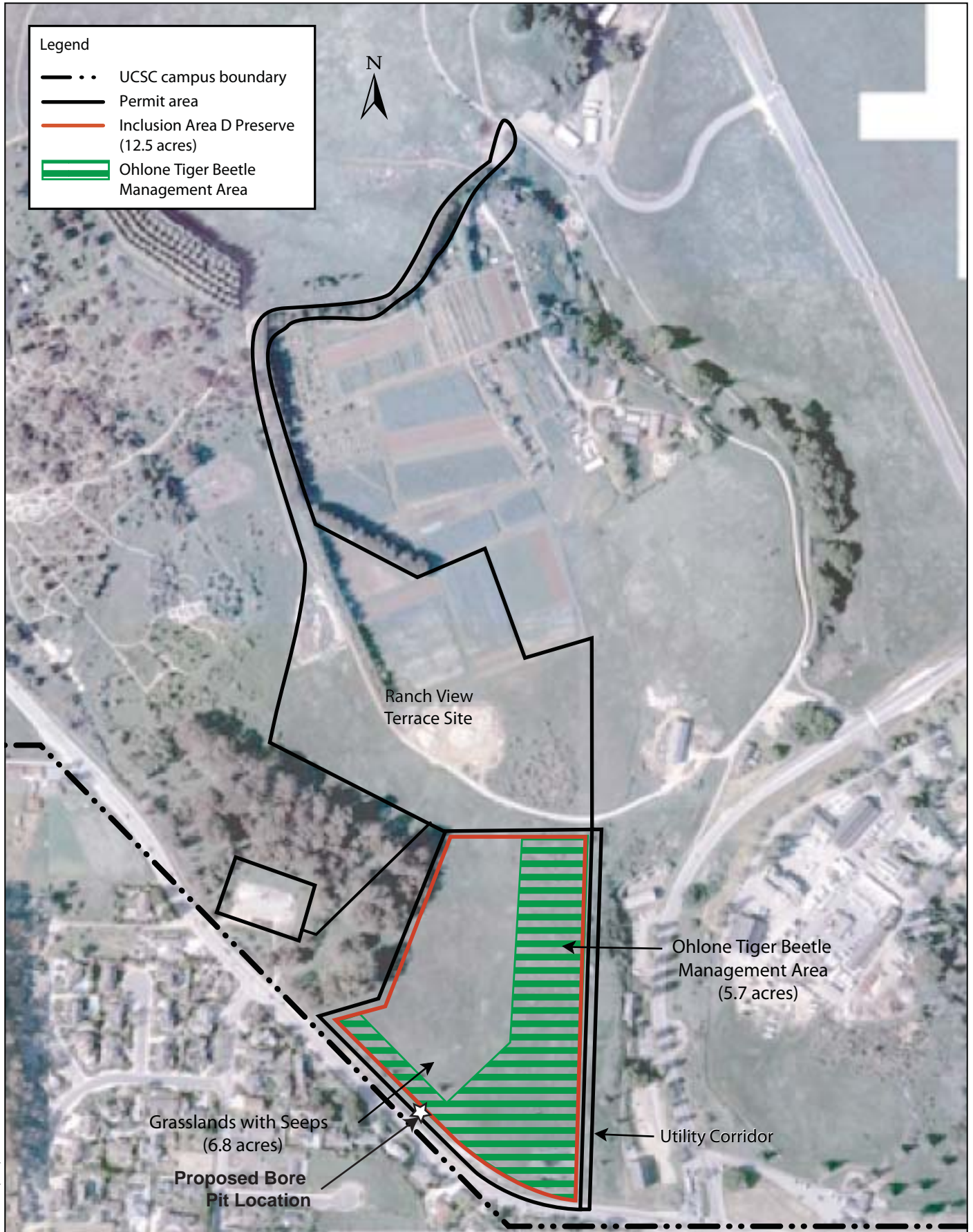
One proposed bore pit would be ~~inside the Preserve but would not be within the adjacent to the Preserve boundary. OTB and CRLF.~~ As discussed above, implementation of TII Phase A Mitigations BIO-2, BIO-3, and BIO-4A and BIO-4B would ensure that the Project construction does not result in take of OTB or CRLF or conflict with the HCP. As discussed in Section 3.9, below (*Hydrology and Water Quality*), implementation TII Phase A Mitigation HYD-1 would ensure that drilling fluid is contained and disposed of appropriately off-campus so that it does not alter the permeability or other characteristics of the site soils. Therefore, the Project would not conflict with the HCP.

### **Summary**

Because the Project incorporates LRDP Mitigations BIO-11, BIO-12-A, and BIO-12B, the Project would not result in significant impacts to nesting special-status birds or overwintering western burrowing owl. The Project could result in potentially significant impacts to special-status plants, Ohlone tiger beetle, California red-legged frog, western pond turtle, and American badger. Implementation of TII Phase A Mitigations BIO-1, BIO-2, BIO-3, BIO-4A, BIO-4B, BIO-5 and BIO-6 would reduce impacts to these species to a less than significant level. Consistent with LRDP Mitigation BIO-6, which is included in all campus construction contracts that involve ground disturbance, the project would implement measures during construction to avoid the spread of noxious weeds.



Figure 6.4-1: Biological Resources Study Areas  
 UCSC Telecommunications Infrastructure Improvements Phase A  
 October 2012



02428.02 (1/04)

Figure 6.4-2: Inclusion Area D Preserve  
 UCSC Telecommunications Infrastructure Improvements Phase A  
 October 2012

## 6.5 CULTURAL RESOURCES

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

Cultural resources issues and programmatic mitigation measures applicable to LRDP development are described in Volume I, Section 4.5, of the 2005 LRDP EIR (UCSC 2006a). The following, previously adopted LRDP EIR mitigations for potential impacts to biological resources are applicable to and included in the project (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigations CULT-1A through CULT-1H (archaeological records review and survey, and measures to be taken in the event that archaeological resources are found on the project site)

LRDP EIR Mitigation CULT-2B (requirement to determine the potential for a project to result in impacts to historical resources)

LRDP EIR Mitigation CULT-4C (measures to be taken in the event of a discover on campus of human bone, suspected human bone, or a burial)

LRDP EIR Mitigation CULT-5A (evaluation of whether a project site is underlain by a formation that is known to be sensitive for paleontological resources)

LRDP EIR Mitigation CULT-5C (measures to be taken in the event of a discovery of a paleontological resource on campus)

LRDP EIR Mitigation CULT-5D (measures to be taken in the event that a proposed project would result in impacts to a unique paleontological resource)

a) The project site is not visible from any scenic highways. The South Core building site is in the vicinity of the historic district and is partly visible from the Cardiff House, which is a contributing feature to the historic district. Several redwood trees serve to screen the existing garden sheds from the Cardiff House. Several redwood trees largely screen the project site from view (Figure 6.1-1). The new building would be taller than the existing garden sheds and a portion of the building would be partly visible through the trees (Figure 6.1-2). However, the existing view through the trees includes the Shop Stores building, which is the same height as the new building, and the roof of the Fleet Services garage on the west side of the equipment yard. The exterior of the new building is designed for consistency with the historic and modern barn-type structures surrounding the equipment yard. Its appearance would be more consistent

with the character of the historic district than the existing garden sheds, which are of a modern style. Therefore, the new building would not substantially degrade the view from the Cardiff House.

b,d) Consistent with LRDP mitigation CULT-1A and -2B, areas of potential effects (APE) for archaeological resources and for historic buildings and structures were defined for the project. For archaeological resources, the APE was defined to include all areas where native soils potentially could be disturbed. The APE was determined based on the route of the telecommunications cable installation detailed on Project plans, and included 10 feet on either side of this route. Areas along the conduit alignments that would be installed through directional boring were determined to be outside the APE, except for the bore pits, although the survey covered the entire length of the route. For historical built-environment resources, the APE includes all buildings and structures that would be directly affected by development and from which the project site is visible.

Patricia Paramoure Archaeological Consulting conducted an archaeological records search in the archives of the UCSC Physical Planning and Construction and performed an intensive pedestrian field survey for archaeological resources in the area of potential effects. The survey was carried out between August 14 and August 26, 2012 (Paramoure 2012). Roads and buildings existed or areas that have been so heavily disturbed that there is no possibility of remaining surface deposits were excluded from the survey.

During survey for this project, areas of the campus that have been determined to be possible locations of cultural resources through record and archival research were thoroughly investigated visually while on foot. Some areas, however, have been covered over with asphalt or existing buildings, causing the native soil to be inaccessible for viewing.

A portion of the APE is within the 30-acre Cowell Lime Works Historic District, which is listed on the National Register of Historic places for its importance to local and state history (Figure 3-1). The District contains the remnants of a lime production complex which was once the largest lime manufacturing plant in the state. Other portions of the APE are within areas of former lime industry-related activities that are outside the District. A portion of the APE is adjacent to the City of Santa Cruz Reservoir site, CA-SCR-359H, which consists of a reservoir (now known as the Arboretum Pond), three dams (West Dam, East Dam and Arboretum Dam), a water tower, a spillway, and an associated refuse scatter. The Arboretum Dam, water tower, and spillway were constructed in 1890 as part of the City of Santa Cruz water supply system.

The Project would not disturb any known pre-historic archaeological or historic archaeological resources, and no new archaeological sites were discovered during the survey. However, the possibility for the discovery of unrecorded sites during Project construction exists, and the ground disturbing activities both within and adjacent to the Cowell Lime Works Historic district, other locations in the vicinity of historic lime industry activity, and other areas of archaeological sensitivity, may impact unknown buried cultural deposits, which would be a potentially significant impact. Implementation of previously adopted LRDP Mitigation Measures CULT-1A through CULT-1H, which are applicable to and included in the Project would reduce the impact to a less-than-significant level. These mitigations provide for contractor training, construction monitoring by a qualified archaeologist, data recovery, and other measures to avoid or mitigate for impacts to cultural resources discovered during construction. If the project area of disturbance is changed to avoid Ohlone tiger beetle, as may be required as part of TII Mitigation BIO-2 (see Section 6.4, above), an additional cultural resources survey would be performed to cover any areas not previously surveyed, consistent with LRDP Mitigation Measure CULT-1C. LRDP Mitigation measures CULT-1C through CULT-1H would be implemented as applicable to these new areas, and would ensure that work in these areas does not result in a significant impact to cultural resources. Based on the recommendations of the archaeological survey report for the proposed Project, an archaeological monitor would be present to observe all earth disturbing activities in the locations described below and if

archaeological resources are identified, LRDP Mitigation Measures CULT-1F, CULT-1G and CULT-1H will be implemented as warranted:

**Trench northeast of Central Heat Plant.** Monitoring is recommended for the northern-most section of this area, where the project would include directional boring in native soil. A pre-historic Native American that includes midden and other habitation debris, and the historic Elfland Kiln are located near this site. In addition, this work area is in the ecotone of the coastal meadows and redwood forests, an environment where prehistoric archaeological sites are common.

**Trenching near Cowell College.** Monitoring is recommended for all trenching excavation activity from the new communications manhole at the entrance to Cowell Apartments 3 to the north on Hagar Drive and from the new communications manhole at the entrance to Cowell Apartments 3 to the north on Hagar Drive and then to the west on Steinhart Way. There are historic roads near this location. This area is in the ecotone of the coastal meadows and redwood forests, an environment where prehistoric archaeological sites are common. There are historic roads near this location. This area is in the ecotone of the coastal meadows and redwood forests, an environment where prehistoric archaeological sites are common.

**Telecommunications line from the Granary to the West and Northwest.** Monitoring is recommended for all excavation activities between the Granary and the north end of the Arboretum. This work is in the vicinity of former lime industry features and the City of Santa Cruz Reservoir site.

**Cowell Lime Works Historic District.** As required by 2005 LRDP EIR Mitigation Measures CULT-2A, an archaeological monitor should be present during all excavation activities within the Cowell Lime Works Historic District. In addition, an archaeological monitor should be present during all initial ground disturbance within the Campus Facilities area that is adjacent to the District, including grading, foundation and utility excavation for the new South Core building.

c) Consistent with LRDP Mitigation CULT-5A, Campus Planning staff consulted the most recent campus soils and geology map and determined that the project is sited on schist, which has low paleontological sensitivity. There are no known unique paleontological resources or geologic features on the project site. For these reasons, construction monitoring by a paleontologist is not required. Consistent with LRDP Mitigation CULT-5C, construction contract specifications will include the requirement that in the event of a discovery of a paleontological resource on the project site, work within 50 feet of the find shall halt until a qualified paleontologist has examined and assessed the find and, if the resource is determined to be a unique paleontological resource, the resource is recovered. LRDP Mitigation CULT-5D is a component of the Project requiring that the Campus adequately document, analyze, and curate any finds at an appropriate institution. The project therefore would not result in a significant impact to paleontological resources.

### **Summary**

The project incorporates previously adopted 2005 LRDP EIR Mitigations CULT-1A through CULT-1H, -CULT-2B, CULT-4C, CULT-5A, CULT-5C, and CULT-5D and therefore will result in less-than-significant cultural resources impacts.

## 6.6 GEOLOGY, SOILS, & SEISMICITY

GEOLOGY, SOILS, & SEISMICITY	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project- Level Mitigation Incorporated	Less than Significant Impact	No Impact
<hr/>					
Would the project...					
<hr/>					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 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 risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Geology, soils and seismicity background and issues, and programmatic mitigation measures applicable to LRDP development, are described in Volume I, Section 4.6, of the 2005 LRDP EIR (UCSC 2006b). The following, previously adopted LRDP EIR mitigation for potential impacts to biological resources are applicable to and included in the project (the full text of the mitigation measure is included in Appendix B):

LRDP EIR Mitigation GEO-1 (preparation of geotechnical investigations for new development)

a,i) The UC Santa Cruz campus and the surrounding area are not located within an Alquist-Priolo Earthquake Fault Zone and no active faults are mapped on the campus (Nolan Zinn 2005). No impact would occur.



a,ii-v) The proposed project site, like much of California, could experience significant seismic shaking. Consistent with LRDP Mitigation GEO-1, a geotechnical study has been prepared for the proposed South Core building, and project design will conform to its recommendations (Pacific Crest Engineering 2012). The new building and the modifications to the existing buildings would be designed and constructed in conformance with the California Building Code (CBC). Consistent with the University of California Seismic Safety Policy, nonstructural building elements such as furnishings, fixtures, cabinets, and utilities that could create a hazard if dislodged during an earthquake would be anchored for seismic resistance. Based on the nature of the soils, the location of the ground water table, and the estimated ground accelerations, the potential for liquefaction in this area is considered low. The Project would not result in significant impacts related to seismic shaking or landslides.

b) The potential for erosion related to construction activities and to new impervious surface is addressed in Section 6.9, below.

c) Liquefaction, lateral spreading and landslides are discussed under item (a,ii-iv) above. The geotechnical study for the proposed South Core building found a zone of loose soils from approximately 25 to 32 feet, underlain by marble rubble (Pacific Crest Engineering 2012). This type of subsurface condition is indicative of a buried doline, or sinkhole.<sup>8</sup> Consistent with the recommendations of the geotechnical study, the building foundation would consist of a structural mat, to spread the foundation load evenly over the building pad, and the upper four feet of soil would be replaced with aggregate base to reduce the potential for intrusion of water that could affect the doline. Implementation of these measures would ensure that the doline does not result in a significant risk to people or property. The impact would be less than significant.

d) Expansive soils shrink and swell as a result of moisture changes. This can cause heaving and cracking of concrete slabs, pavements, and structures founded on shallow foundations if they are inadequately designed for these conditions. Potential risk to life and property can result if buildings were constructed on expansive soils without appropriate design. These risks can be avoided through the use of engineering solutions such as replacement of expansive soils with fill, lime treatment of soils, or deepening of foundations.

The 2005 LRDP EIR (Vol. 1, p. 4.6-16) concluded that, with implementation of 2005 LRDP Mitigation GEO-1, in conjunction with Campus Standards Handbook and compliance with the CBC, construction of campus facilities on expansive soils under the 2005 LRDP would be a less-than-significant impact.

Consistent with 2005 LRDP Mitigation GEO-1, a geotechnical investigation is being conducted for the proposed Project and its recommendations will be incorporated into project design and construction. These requirements will ensure that the project incorporates appropriate soil treatment and/or foundation design. Therefore, the impact would be less than significant and additional mitigation is not required.

e) No septic tanks or alternative wastewater disposal systems would be installed as part of the Project. No impact would occur.

---

<sup>8</sup> The dissolution of marble bedrock beneath the campus over geologic time has created an extensive system of subsurface solution cavities. At the ground surface, these cavities can result in sinkholes, or dolines; subsurface manifestations include zones of very loose or soft soils at depth, loose marble rubble with little or no matrix, or very weathered marble bedrock with open voids or cavities loosely filled with residual soil.

**Summary**

With implementation of previously adopted LRDP Mitigation GEO-1, all impacts of the proposed project related to geology and soils would be less than significant. No additional mitigation is required.

## 6.7 GREENHOUSE GAS EMISSIONS

GREENHOUSE GAS EMISSIONS	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The 2005 LRDP EIR was certified before the passage of Assembly Bill 32 (Global Warming Solutions Act of 2006) and therefore did not analyze greenhouse gas emissions (GHGs) or climate change. There are no previously adopted mitigation measures for climate change impacts that are applicable to the proposed project.

Operation of construction equipment and vehicle trips associated with project construction would result in emissions of GHGs. The Project would also install new telecommunications equipment, lighting, and cooling systems that would utilize electricity and thereby result in indirect GHG emissions associated with the production of electricity by PG&E or at the Campus' cogeneration plant.

### 6.7.1 Standards of Significance

The proposed project is located in the Monterey Bay Unified Air Pollution Control District (MBUAPCD). The MBUAPCD has not adopted thresholds for assessing climate change impacts. In a white paper published in January 2008, examining approaches that local governments might take to assess GHG emissions under CEQA, the California Air Pollution Control Officers Association (CAPCOA) examined a non-zero threshold of 900 MT CO<sub>2</sub>e per year, which would capture approximately 90 percent of residential projects in the state (CAPCOA 2008). Several air quality management and air pollution control districts, including the Sacramento Metropolitan Air Quality Management District (SMAQMD), the San Joaquin Valley Air Pollution Control District, and the Bay Area Air Quality Management District (BAAQMD),<sup>9</sup> have adopted guidance documents for evaluating the significance of GHG emissions under CEQA. Other districts have published draft guidance documents that have not yet been formally adopted, or have adopted thresholds for stationary source emission but not for residential and commercial projects. For residential projects, the BAAQMD adopted a threshold for total emissions of 1,100

<sup>9</sup> The significance thresholds contained in the BAAQMD's 2010 CEQA Guidelines were challenged by the CA Building Industry Association. On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the Air District had failed to comply with CEQA when it adopted the thresholds contained in the District's 2010 CEQA Guidelines. The court found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the District to set aside the thresholds and cease dissemination of them until the District had complied with CEQA. The BAAQMD accordingly is not recommending the use of the 2010 significance thresholds to determine the significance of air quality impacts. Instead, the BAAQMD recommends that the lead agency should "determine appropriate air quality thresholds of significance based on substantial evidence in the record." The Court did not rule on or question the adequacy of the evidentiary basis supporting the significance thresholds that are contained in the 2010 CEQA Guidelines and the BAAQMD-recommended impact assessment methodologies. Therefore, a lead agency has the discretion to use the significance thresholds and methodology for analyzing air quality impacts under CEQA based on the evidence and technical studies supporting the Guidelines or other evidence.

MTCO<sub>2</sub>e per year and a efficiency-based threshold of 4.6 MTCO<sub>2</sub>e per service population (employees plus residents) per year (BAAQMD 2010). These thresholds are based on projected increases in GHG emissions using growth data related to residential and commercial development specific to the Bay Area. The South Coast Air Quality Management District (SCAQMD) has evaluated, but not adopted, a screening threshold of 3,000 MT CO<sub>2</sub>e per year, which would capture 90 percent of GHG emissions from development projects in that region. The San Joaquin Valley Air Pollution Control District (SJVAPCD) adopted performance-based standards to assess the significance of project specific greenhouse gas emissions on global climate. Projects implementing the District's "best performance standards" would be determined to have a less than cumulatively significant impact. Otherwise, the SJVAPCD standards require that a project demonstrate a 29 percent reduction in GHG emissions from business-as-usual to determine that a project would not have a cumulatively significant impact. The SMAQMD guidance does not provide a quantitative threshold, but recommends that the project be analyzed with respect to AB 32 goals, specifically a reduction in GHG emissions to 1990 levels by 2020, or approximately a 30 percent reduction from business as usual.

This analysis uses CAPCOA's threshold of 900 MT CO<sub>2</sub>e per year for to determine whether the Project would make a cumulatively considerable contribution to global climate change. CAPCOA estimated that this threshold would capture 90 percent of commercial and residential projects, and is the most stringent of the non-zero thresholds that have been proposed for these types of projects.

The second Appendix G criterion, requiring a determination of whether the project will conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases, may be evaluated by demonstrating compliance with plans, policies, or regulations adopted by local governments to curb GHG emissions. According to the Natural Resources Agency: Provided that such plans contain specific requirements with respect to resources that are within the agency's jurisdiction to avoid or substantially lessen the agency's contributions to GHG emissions, both from its own projects and from private projects it has approved or will approve, such plans may be appropriately relied on in a cumulative impacts analysis (California Natural Resources Agency 2009).

The University of California has set the following emissions reduction goals: 1) Reduce GHG emissions to 2000 level by the year 2014; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce to 80 percent below 1990 levels. UC Santa Cruz has developed a Climate Action Plan (CAP) that quantifies the Campus' emissions sources and the reduction in emissions that will be needed for the Campus to meet the University's targets, and identifies a range of potential emission reduction projects (UC Santa Cruz 2011). The potential emission reduction projects include 26 energy efficiency projects, installation of renewable energy generation facilities, switching to a direct access energy provider; a variety of measures to reduce Campus-related vehicle trips, replacing the Campus Transit fleet with more fuel-efficient vehicles; student-fee-funded energy efficiency and carbon reduction projects; carbon offsets needed to meet green building requirements for specific campus buildings; and participation in a Climate Action Compact with several regional partners. The Campus' CAP does not include a comprehensive strategy by which the Campus will meet the University identified reduction goals and thus does not provide the basis for a cumulative impacts analysis as specified by the Natural Resources Agency. However, for the purposes of this analysis, the Project would be considered to have a significant adverse impact with respect to climate change if it were to conflict with or makes infeasible any of the potential emission reduction projects identified by the UC Santa Cruz CAP.

The project would also be considered to have a significant adverse impact with respect to climate change if it were to conflict with California's AB 32. AB 32, the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed on September 27, 2006, was the first enforceable statewide program to limit GHG emissions from all major industries with penalties for noncompliance. The AB 32 Scoping Plan contains an outline of the proposed State strategies to achieve the 2020 GHG

limits required by AB 32 (California Air Resources Board, 2008).. The following AB 32 Scoping Plan measures are relevant to the proposed project:

**Energy Efficiency:** Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly owned utilities).

**Green Buildings:** Expand the use of green building practices to reduce the carbon footprint of California’s new and existing inventory of buildings.

## 6.7.2 Project Greenhouse Gas Emissions

### *Operational GHG Emissions*

Operation of the Campus results in both “direct” and “indirect” GHG emissions. The Campus’ direct emissions are those emissions from sources that are owned or controlled by the University. At UC Santa Cruz, these include the emissions from stationary sources such as the cogeneration plant, boilers, and generators, and from vehicles owned and operated by the Campus. Indirect emissions are those that occur because of the Campus’ actions but that are produced by sources owned or controlled by another entity. These include emissions from the production and distribution by PG&E of electricity purchased and consumed by the Campus, the production and distribution of water to the Campus by the Santa Cruz Water District, the treatment of wastewater from the Campus by the City of Santa Cruz, and decomposition of waste materials from the Campus that are disposed of at the City landfill.

The Project would install new telecommunications equipment, and associated lighting and cooling equipment in the new South Core building and in telecommunications rooms in 25 existing buildings. These improvements would increase the Campus’s electricity consumption by an estimated 231 MWH per year.<sup>10</sup> This estimate takes into account the removal of existing telecommunications equipment but does not take into account the higher energy efficiency of the new equipment. PG&E delivers electricity to the campus, but the Campus’ cogeneration plant also generates a portion of the electricity used by the campus. The average carbon intensity of the electricity used on the campus in 2014 is estimated at 0.53 metric tons (MT) of carbon dioxide equivalent (CO<sub>2</sub>e)<sup>11</sup> per MWH.<sup>12</sup> Therefore, the Project would increase the Campus annual GHG emissions by approximately 122.6 MT CO<sub>2</sub>e.

### *Construction GHG Emissions*

The CalEEMod software was used to calculate construction-phase emissions of carbon dioxide CO<sub>2</sub> from construction of the new South Core building, including demolition of the existing sheds, grading, building construction, painting, and paving; and from directional boring and trenching to install new conduit.

---

<sup>10</sup> The net estimated power draw for the new telecommunications equipment and associated cooling and lighting equipment is 84.5 kW (Peter McDonald, SFMI, July 12, 2012). The telecommunications equipment selected by the Campus manages its power draw based on actual use; cooling demand would fluctuate accordingly. The estimated annual electricity consumption conservatively assumes that the equipment will operate at 60 percent loading for 12 daytime hours per day during the nine months of the academic year and at 30 percent loading for daylight hours during the three summer months, and at 10 percent loading during 12 evening and night-time hours year-round.

<sup>11</sup> CO<sub>2</sub>e is a measure for describing how much [global warming](#) a given type and amount of [greenhouse gas](#) may cause, using the functionally equivalent amount or concentration of [carbon dioxide](#) (CO<sub>2</sub>) as the reference.

<sup>12</sup> Jacobs Engineering, 2010. UCSC Cogeneration Plant Replacement Emissions Evaluation. September 3.

Project-specific values based on schematic project design were used to establish the schedule, estimated equipment usage, and number of workers assumed by the model. The CalEEMod results are included in Appendix D of this Initial Study.

The manufacture of construction materials used by the projects would indirectly contribute to climate change (upstream emission source). Upstream emissions are those that are generated during the manufacture of products used for construction (e.g., cement, steel, and transport of materials to the region). The upstream GHG emissions for these projects, which may also include perfluorocarbons and sulfur hexafluoride, are not estimated in this impact analysis because they are not within the control of the University and a lack of data precludes their quantification without speculation.

Construction GHG emissions are one-time emissions that would occur only during construction activities. It is common practice to amortize construction-related GHG emissions over the project's lifetime (generally 25 to 40 years) in order to include these emissions as part of a project's total emissions so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies. Although Campus buildings typically have a lifetime of over 50 years, the construction GHG emissions were conservatively amortized over a shorter period of 30 years. The total Project emissions of GHGs from construction activities are estimated at 63.01 MT CO<sub>2</sub>e, or 2.10 MT CO<sub>2</sub>e per year for 30 years.

### 6.7.3 Impact Significance

a. Table 6.7-2 summarizes the net Project GHG emissions from all sources.

**Table 6.7-2  
Summary of Project GHG Emissions**

Source	One-Time GHG Emissions (MTCO <sub>2</sub> e)	Annual GHG Emissions(MT CO <sub>2</sub> e/year)
<b>Operations</b>	--	122.6
<b>Construction</b>	63.01	2.10
<b>Total</b>	--	<b>124.7</b>

As discussed in Section 6.7.2, above, and shown in Table 6.7-1, total GHG emissions from the Project are estimated at 124.7 MT CO<sub>2</sub>e per year. This level of emissions would be below the significance threshold of 900 MT CO<sub>2</sub>e per year and the impact would be less than significant.

b) As discussed in Section 6.7.1, above, the proposed Project would be considered to make a significant contribution to global climate change if it would conflict with or make infeasible any of the potential GHG emission reduction measures identified in the UC Santa Cruz CAP, or the applicable energy efficiency and green building measures included in the AB 32 Scoping Plan. The Project would add new telecommunications equipment and associated cooling, and lighting equipment. All of these would incorporate energy efficiency strategies. The new telecommunications equipment that has been selected by the Campus manages its power draw based on actual use. Where feasible, the new and remodeled telecommunication rooms would be cooled with exhausted air and fresh air rather than air conditioning. Where air conditioning is necessary, high-efficiency split systems would be used. All new lighting would be compact fluorescent or other high-efficiency models.

Green building strategies are available only for the South Core building, as work in the existing buildings would be confined to telecommunications closets and telecommunications wiring. The green building strategies that are available to the project are limited by the type of construction. The Project would not create water demand or generate wastewater, and it would not result in an increase in campus population

or new vehicle trips. The new building would utilize a previously developed site and existing utilities, including the Emergency Response Center emergency generator. To minimize the need for cooling, the building would be constructed of concrete blocks. A high-efficiency split-system air conditioning system would provide cooling when necessary. The Project incorporates feasible energy efficiency and green building elements, would support UC Santa Cruz' climate action goals by replacing existing telecommunications facilities and lighting with more efficient equipment, and therefore would not conflict with the Campus' CAP or with the AB 32 Scoping Plan. The impact would be less than significant.

**Summary**

GHG emissions associated with the proposed project would not make a cumulatively considerable contribution to climate change. Mitigation is not required.

## 6.8 HAZARDS AND HAZARDOUS MATERIALS

HAZARDS & HAZARDOUS MATERIALS	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project...					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<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 for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Hazards and hazardous materials issues and programmatic mitigation measures applicable to LRDP development are described in Volume I, Section 4.7, of the 2005 LRDP EIR (UCSC 2006b). The following, previously adopted LRDP EIR mitigations for potential impacts related to hazards and hazardous materials are applicable to and included in the project (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigation HAZ-7 (survey for and remediation of potential contamination before any demolition or renovation work is performed)



LRDP EIR Mitigation HAZ-9A (construction traffic control and roadway closure notification requirements for contractors)

a) Like any other construction activities, construction of the proposed project could involve use of hazardous chemicals, such as petroleum products and solvents associated with the use of heavy construction equipment. Any such materials would be handled and disposed of in compliance with state and federal laws regulating hazardous waste. Campus Standards provide specific requirements for hazardous materials spill prevention, reporting and response. These requirements would minimize the potential for hazards to the public or to the environment as a result of a release of hazardous materials.

Consistent with Campus procedures and LRDP Mitigation HAZ-7, the building components that will be demolished or remodeled will be or have been surveyed for the presence of potential hazardous materials as part of project design. The Campus would develop procedures and work plans for abatement of these materials during construction that will be incorporated into the contract documents. These documents include qualification requirements for contractors, workers, and hazardous materials haulers; identify relevant regulatory requirements; specific procedures for removal of each type of material, for waste disposal and manifesting procedures, and for final clean-up and criteria for clearing the buildings for re-occupancy. Inclusion of these requirements in the construction contract documents would ensure that hazardous materials encountered during construction are managed in compliance with federal and state regulations, campus policies, and current procedures of UC Santa Cruz Environmental Health and Safety. This would minimize the potential for exposure of workers to contaminated building materials or other contamination inside structures. Therefore, the project's potential to expose people or the environment to hazardous materials would be less than significant.

b,c) With the exception of household hazardous materials used in cleaning and maintenance, hazardous materials would not be used in the South Core building or the new or remodeled telecommunications rooms. No impact would occur.

d) There are no sites on campus that are listed as hazardous-materials sites pursuant to Government Code Section 65962.5. Past uses of the campus, including the proposed project site, are well known, and are not likely to have resulted in soil or groundwater contamination. Therefore, no impact would occur.

e,f) There are no public airports or private airstrips in the vicinity of the UC Santa Cruz campus. No impact would occur with respect to air traffic hazards.

g) Construction of the proposed project could necessitate temporary lane closures on Hagar Drive, Steinhart Way, the Cowell and Merrill access roads, and service roads in the vicinity of the South Core building site. Consistent with LRDP Mitigation HAZ-9A, the proposed project would therefore be required to comply with standard Campus contract provisions that include: (1) Construction must be conducted in a manner that minimizes the obstruction to traffic; (2) Contractors are required to provide advance notification of proposed road closures to the campus community and to emergency services providers; (3) Alternate access routes must be clearly designated; (4) Adequate access to fire hydrants and for the passage of emergency vehicles must be maintained, and campus police and fire departments and dispatchers must be notified of proposed road closures and alternative travel routes for emergency vehicles; (5) Handicapped-accessible and emergency exit routes from occupied buildings must be maintained at all times. The proposed project will comply with these and all other relevant Campus Standards. The project's potential to interfere with to Emergency Operations therefore would be less than significant.

h) Although there is some risk of wildfire in undeveloped areas within the campus, Campus fire management procedures have been successful in preventing and controlling fires on campus in the past

decade. The proposed project would replace existing structures within a developed area, and would not interfere with Campus fire management or otherwise exacerbate the existing hazard in any way. Therefore, the project's potential to result in increased risk of wildfire would be less than significant.

**Summary**

LRDP EIR mitigation HAZ-7 would be implemented during project design and LRDP Mitigation HAZ-9A would be implemented during construction and occupation of the project. Accordingly, the project will have no impact or a less than significant impact related to hazards and hazardous materials.

## 6.9 HYDROLOGY & WATER QUALITY

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

Hydrology and water quality background for the campus, and issues and programmatic mitigation measures applicable to LRDP development, are described in Volume II, Section 4.8, of the 2005 LRDP EIR (UCSC 2006b). The following, previously adopted LRDP EIR mitigations for potential impacts to hydrologic resources and water quality are applicable to and included in the project (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigation HYD-3C (storm water runoff flow rate requirements for projects that create new impervious surface)

LRDP EIR Mitigation HYD-3D (storm water runoff volume control requirements for new capital projects)

a-f) The building site is located within the High Street drainage area. The watershed encompasses approximately 60 acres, 24 of which are on the UC Santa Cruz campus. The South Core building site, which is currently unpaved, drains to the Emergency Response Center (ERC) storm water drainage system. A system of underground pipes designed for storm water detention release storm water at pre-development runoff rates. From the pipe detention system, storm water is treated by an engineered oil and sediment trap and ultimately discharged to a meadow southwest of the ERC building, through a 160-foot-long level spreader that dissipates runoff to allow it to infiltrate into the soil.

#### Short-Term Construction Water Quality

Ground disturbance and grading has the potential to result in water quality impacts during construction. The proposed Project would entail grading for the new South Core building and trenching and directional boring for installation of the new conduit. The Project would disturb a total of approximately 0.25 acre. As required for all Campus projects with less than 1 acre of ground disturbance, project construction contract documents would require the contractor to implement erosion and sediment control measures specified in Appendix D of the Campus Standards (<http://ppc.ucsc.edu/standards/appendicies/D/>), and to prepare and implement an Erosion and Sediment Control Plan (ESCP). As discussed in Section 6.6, *Biological Resources*, implementation of TII Phase A Mitigation BIO-2B would ensure that drilling fluid is contained and that any fluid that seeps to the ground surfaces through “frac-outs” is collected and removed from the site. Thus, Project construction would not have a significant adverse effect on water quality.

#### Long-Term Operational Water Quality, Increased Runoff and Flooding

The proposed project would not result in an increase in indoor water use at the site and therefore the volume of wastewater discharged from the site would/would not increase. The project would not change the types of activities and uses of the site. Therefore, there is no reason to expect the quality of the wastewater discharged to the sewer system to change.

The Project would not add new parking spaces and would be accessed by existing public and service roads, and the new building would not include a loading dock. Hazardous materials, other than those used in building cleaning and maintenance, would not be used at the site. Therefore, the Project would not add new sources of runoff pollutants.

Construction of the South Core building would result in an increase in the area of impervious surface of approximately 1,000 sf. LRDP Mitigations HYD-3C and HYD-3D are applicable to and incorporated into the proposed Project. These mitigations require that post-development storm water runoff peak flow rates not exceed pre-development rates, and that every development project include design measures to maximize infiltration and dissipation of runoff near its source. In addition, the Project must comply with the following requirements of Campus Standards:

- Storm drainage design shall insure the post-construction storm water flow rate will not cause excessive erosion. If the flow rate is greater than 20 percent of the 2-year storm, the designer shall

demonstrate the project will not cause excessive erosion. Each project shall also include design measures to avoid or minimize the increase in the volume of runoff discharged from the site to the maximum extent feasible.<sup>13</sup>

The Project could meet these standards through discharge to the ERC level spreader, if runoff calculations demonstrate that the system has adequate capacity to handle the new runoff, and/or through the use of permeable hardscape or landscaping around the new building. In addition to the runoff standard described above, each project must include design measures to avoid or minimize the increase in the volume of runoff discharged from the site to the maximum extent feasible. The Campus has developed a low-impact-development (LID) protocol that is applicable to the proposed project. LID is an approach to storm water management that manages storm water at the source by integrating site hydrologic and environmental functions into the development design. By minimizing directly connected impervious area and promoting infiltration, LID features such as vegetated roofs, bioswales, and bioretention areas, and pervious pavement, mimic natural hydrologic conditions to counteract the hydrologic effects of development. The end hydrological results are a reduction in runoff volume, an increased time of concentration, reduced duration and peak rate of flows, and improved water quality. Because more water is retained on-site and in distributed facilities, the rate of discharge is less critical for LID facilities, since different facilities will discharge into the stream system at different times.

Compliance with the Campus Standards described above, as well as with LRDP Mitigations HYD-3C and HYD-3D, would ensure that the additional runoff added to the system by the proposed Project does not cause erosion. The increase in runoff from the proposed project would not result in flows that would increase erosion and sedimentation or result in flooding, and the impact would be less than significant.

g-j) The proposed project has no potential to result in impacts with respect to 100-year flood hazard areas, dam or levee failure, or inundation by seiche, tsunami, or mudflow. The project site is not within a 100-year flood hazard area and is outside the inundation hazard area that could be affected by a failure of levees or dams, including Newell Creek Dam. The main campus is not in an area subject to inundation by seiche, tsunami, or mudflow. The project would not result in impacts related to any of these hazards.

### **Summary**

LRDP Mitigations HYD-3C and HYD-3D are applicable to and incorporated into the Project. Accordingly, the Project would result in less-than-significant impacts related to hydrology and water quality and no project specific mitigation is required.

---

<sup>13</sup> This is an interim hydromodification standard adopted by the Campus pursuant to its Storm Water Management Plan (SWMP) (UC Santa Cruz 2009). Hydromodification refers to changes in the magnitude and frequency of stream flows as a result of urbanization, and the resulting impacts on the receiving channels in terms of erosion, sedimentation and degradation of instream habitat. The degree to which a channel will erode is a function of the increase in driving forces (shear stress), the resistance of the channel (critical shear stress), the change in sediment delivery, and the geomorphic condition of the channel. Critical shear stress is the stress threshold above which erosion occurs. Only those flows that are large enough to generate shear stress in excess of the critical shear stress of the bank and bed materials cause erosion. This increases the shear stress exerted on the channel by stream flows and can trigger erosion in the form of incision (channel downcutting) or widening (bank erosion) or both. Increases in flow below critical shear stress levels have little or no effect on the channel. The Campus standard is based on an order issued by the San Francisco Bay Regional Water Quality Control Board to the San Francisco Public Utilities Commission for controlled release operations, in which threshold of flow that would cause excessive erosion was defined as 20 percent of the 2-year storm (Order No. <R2-2008-XXX>).

## 6.10 LAND USE & PLANNING

LAND USE & PLANNING	Potentially Significant Impact	Project Impact Adequately Analyzed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project...					
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in development of land uses that are substantially incompatible with existing adjacent land uses or with planned uses?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Land use background and issues relevant to LRDP development are described in Volume II, Section 4.9, of the 2005 LRDP EIR (UCSC 2006b).

a,b,d) The applicable land use plan for the campus is UCSC's 2005 Long Range Development Plan (2005 LRDP). The land use designation for the South Core building site is Campus Support. The proposed use of the site for a telecommunications infrastructure facility is consistent with this land use designation. Trenching and directional boring for the new conduit, and installation of new utilities, would take place in existing Campus roadways, the High Street road right-of-way, and in land designated Site Research and Support (SRS) which is within the UC Santa Cruz Arboretum, Campus Natural Reserve (CNR), and Colleges and Student Housing. Underground utilities are permitted in all of these areas. Disturbance in lands designated SRS and CNR would be limited to directional boring, and excavation of entrance/exit pits and new telecommunications vaults would be confined to existing paths, paved roads, and fire roads.

c) A segment of the alignment along High Street would run just inside the Inclusion Area D Habitat Reserve, which the Campus protects and manages to benefit Ohlone tiger beetle and California red-legged frog, pursuant to a 2005 Implementing Agreement between the U.S. Fish and Wildlife Service and the University and associated Habitat Conservation Plan (HCP). As discussed in Section 6.6, *Biological Resources*, Project construction would not conflict with the HCP.

### Summary

The proposed project would not result in any impacts related to land use.

## 6.11 MINERAL RESOURCES

### MINERAL RESOURCES

Would the project...	Potentially Significant Impact	Project Impact Adequately Analyzed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
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 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 type="checkbox"/>	<input checked="" type="checkbox"/>

a,b) The campus is within a Zone 3 Mineral Resource Zone, according to California Geologic Survey (CGS) maps. The CGS does not consider development in a Zone 3 area as a significant impact to mineral resources under CEQA (Hill 1997). The project site is not within an area designated as a mineral resource on city or county planning maps. Therefore, the proposed project would not result in any mineral resources impacts.

## 6.12 NOISE

NOISE	Potentially Significant Impact	Project Impact Adequately Analyzed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in...					
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Noise issues and programmatic mitigation measures applicable to LRDP development are described in Volume II, Section 4.10, of the 2005 LRDP EIR (UCSC 2006b). The following, previously adopted LRDP EIR mitigations for potential noise impacts are applicable to and included in the project (the full text of the mitigation measures is included in Appendix C):

LRDP EIR Mitigation NOIS-1 (construction noise mitigation requirements)

LRDP EIR Mitigation NOIS-2 (requirement that contractor truck trips use only City-designated truck routes)

a-d) **Operational Noise.** The only new stationary source of ambient noise is the air conditioner for the new South Core building. This would be a split-system air conditioner. The with a sound pressure level of the condenser unit which would be outside the building, would be 60 dBA<sup>14</sup>, which is similar to that of a dishwasher or clothes dryer.<sup>15</sup> The nearest noise-sensitive receptor is about 130 feet from the proposed South Core building site, in the Cardiff Terrace faculty and staff housing development. The impact of this low level of noise would not be noticeable. The new South Core building would be served by an existing emergency generator. The Proposed project would not generate new vehicle trips to the campus that could result in an increase traffic noise on city streets. The impact would be less than significant.

### Construction Noise.

<sup>14</sup> dBA is a measure of sound which weights the decibel scale by discriminating among frequencies in a manner approximating the sensitivity of the human ear.

<sup>15</sup>Cited on the website of the American Speech-Language-Hearing Association (<http://www.asha.org/public/hearing/noise/>)



Potential impacts of construction noise on wildlife are analyzed in Section 6.4, above. Assessment of whether the project would result in a substantial temporary or periodic increase in ambient-noise levels in the project vicinity above levels existing without the project is based on the following thresholds for maximum acceptable noise levels:

- 80 dBA Leq (8h)<sup>16</sup> daytime and evening (7 AM to 10 PM)
- 70 dBA Leq (8h) nighttime (10 PM to 7 AM)

Noise levels of the types of equipment that would be used in Project construction are shown in Table 6.12-1 both with and without implementation of feasible control measures, as measured in decibels (dBA), on a frequency-dependent rating scale that relates to the noise frequency sensitivity of the human ear. Noise levels generated by heavy equipment can range from approximately 70 dB(A) to noise levels in excess of 100 dB(A) when measured at a distance of 50 feet from the noise source. EPA noise generation data for the types of equipment that might be used for construction of the proposed project are presented in Table 6.12-1. Generally, only one piece of heavy equipment would be in use at any one trenching or drilling location at a time or at the South Core building site.

**Table 6.12-1  
Noise Levels and Abatement Potential of Construction Equipment Noise at 50 and 100 Feet**

Equipment	Noise Level at 50 Feet (dBA)		Noise Level at 100 Feet (dBA)	
	Without Controls	With Controls <sup>a</sup>	Without Controls	With Controls <sup>a</sup>
Backhoes	85	75	79	69
Tractors	80	75	74	69
Pavers	89	80	83	74
Trucks	82	75	76	69
Generator	78	75	72	69
Compressors	81	75	75	69
Saws	78	75	72	69

Source: U.S. EPA 1971.

**Note:** (a) Noise levels that can be achieved with implementation of feasible noise controls. Feasible noise controls include selecting quieter procedures or machines and implementing noise-control features requiring no major redesign or extreme cost (e.g., improved mufflers, equipment redesign, use of silencers, shields, shrouds, ducts, and engine enclosures).

As shown on Table 6.12-1, without implementation of noise reduction measures the various types of heavy construction equipment that might be used in construction of the proposed project can generate noise levels ranging from approximately 76 dBA to 85 dBA when measured at 50 feet from the source, and 70 dBA to 80 dBA when measured at 100 feet from the source. As with all noise, construction noise levels diminish rapidly with distance from the construction site, with a decrease of approximately 6 dBA per doubling of distance.

Housing, childcare and medical facilities, parks and academic buildings are considered to be noise-sensitive receptors. There are no childcare or medical facilities or parks in the immediate vicinity of the project site. The nearest noise sensitive receptors to the South Core building site are about 130 feet from the building site, in the Cardiff Terrace faculty and staff housing development. Some of the trenching and directional boring would occur in the vicinity of sensitive receptors, including the Communications

<sup>16</sup> L<sub>eq(8h)</sub> is an average measurement over an eight-hour period.

Building and student apartments and residence halls, and interior telecommunications upgrades would occur within academic buildings. In several locations, trenching or drilling would extend to within 50 feet of a sensitive receptor (Porter Infill Apartments, Communications Building, Ming Ong Computer Center at Merrill College, and Cowell Infill Apartments).

As required by LRDP Mitigation NOIS-1, which is applicable to and included in the proposed Project, the Campus must implement a construction noise mitigation plan for all construction projects on the campus. The noise mitigation plan must include the requirement that all construction equipment be equipped with feasible noise reduction devices, and also must require noticing of loud construction activities and place certain constraints on the scheduling of such activities.

Construction noise levels at the Cardiff Terrace residences, which are more than 100 feet from the Project site, would not exceed 80 dBA except possibly for limited periods when a delivery truck arrives while other construction equipment is being operated. Occupants of buildings within 50 feet of drilling or trenching locations could be exposed temporarily to noise levels exceeding 80 dBA. However, noise construction activities at each trenching or drilling location would be limited to one to two days. Due to the short duration of the construction, and with implementation of the scheduling and notification requirements required by LRDP Mitigation NOIS-1, the impact would be less than significant.

Project construction would not include pile driving, blasting or other construction activity that would generate substantial vibration or groundborne noise. The impacts of vibration from occasional delivery trucks would be less than significant.

#### **Summary**

Because the project incorporates LRDP Mitigation NOIS-1, all noise impacts of the proposed Project on humans would be less than significant. Potential noise impacts on wildlife are analyzed in Section 6.4, *Biological Resources*.

### 6.13 POPULATION & HOUSING

POPULATION & HOUSING	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project...					
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a demand for housing that cannot be accommodated by local jurisdictions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

More detail on population and housing issues related to development under the campus' 2005 LRDP are described in Volume II, Section 4.11 of the 2005 LRDP EIR (UCSC 2006b).

a-d) The proposed Project would upgrade telecommunications infrastructure serving existing buildings on the UCSC campus. It would not construct infrastructure that would trigger enrollment growth on the Campus or that could indirectly induce population growth on or off-campus. The Project would not displace existing housing or people. No impact would occur.

#### Summary

The proposed project would not result in impacts related to population and housing.

## 6.14 PUBLIC SERVICES

PUBLIC SERVICES	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project...					
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:					
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Public services issues relevant to development under the campus' 2005 LRDP, of which the proposed project is an element, are described in Volume II, Section 4.12 of the 2005 LRDP EIR (UCSC 2006b).

a) The proposed project includes neither any new development that would accommodate population increase, nor any new population, and thus would place no demand upon public services. No impact would occur.

### Summary

The proposed project would not create any significant impacts related to public services.

**6.15 RECREATION**

RECREATION	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project...					
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 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 type="checkbox"/>	<input checked="" type="checkbox"/>

Recreation issues relevant to development under the campus' 2005 LRDP are described in Volume II, Section 4.12, of the 2005 LRDP EIR (UCSC 2006b), from which the analysis presented below is tiered.

a,b) The proposed project does not include any new population and would have no effect with respect to the demand for or use of recreational facilities. No impact would occur.

**Summary**

The proposed project would not create any significant impacts associated with recreational facilities.

**6.16 TRAFFIC, CIRCULATION AND PARKING**

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

Traffic and transportation issues relevant to development under the campus' 2005 LRDP are described in Volume II, Section 4.13, of the 2005 LRDP EIR (UCSC 2006b). That section also provides detail on program-level mitigation measures. The following, previously adopted LRDP EIR mitigations for potential impacts to transportation and circulation are applicable to and included in the project (the full text of the mitigation measures is included in Appendix C):

HAZ-9A (requirements for site access during construction)

a) Operation of the new telecommunications equipment would not result in new vehicle trips to or from the campus. The equipment would be operated and maintained by existing Campus staff. No impact to circulation would occur as a result of Project operations.

Construction would generally occur Mondays through Fridays between 7:30 am and 7:30 pm. Construction traffic would include construction worker vehicles, and truck trips associated with material deliveries. Demolition of the existing garden sheds would involve approximately four round-trip truck trips per day for off-haul of demolition debris. No cut or fill would be required for construction of the new South Core building, so grading would not generate a large number of vehicle trips. At most, project

construction would generate eight daily trips, including worker vehicles and hauling and vendor trucks. The trips would be spread out over the day. Thus, the project would add fewer than eight peak hour trips to any one intersection, which would be within the daily fluctuations in traffic to and from the campus and therefore would not have a measurable impact on intersection level of service.<sup>17</sup>

Construction of a storm water detention system in a parking lot approximately 400 feet south of the Merrill Project site as part of the Infrastructure Improvements Phase 2 Project is also planned for the summer of 2013, and would involve a substantial amount of soil offhaul. However, demolition of the garden sheds and trenching for the TII Phase A Project, as well as construction of the storm water detention system, would take place during the summer months, and truck trips would be spread throughout the day. Therefore, construction of the two projects concurrently will result in a less-than-significant cumulative adverse impact on traffic congestion.

b) There is no Congestion Management Agency for the City or County of Santa Cruz. For the reasons discussed under a), above, the proposed project would not conflict with level of service standards at any intersection, road or highway, and is consistent with the campus' TDM programs. No impact would occur.

c) The campus is not within an air safety zone that would require restrictions on development and there are no airports in the campus vicinity. The proposed project has no potential to affect air traffic patterns.

d) The proposed Project would not modify existing roads or paths. No impact would occur.

e) Trenching in Hagar Drive, Steinhart Way, and Campus service roads would require temporary lane closures, which could temporarily increase traffic hazards related to conflicts between construction traffic and other motor vehicle/ bicycle/ pedestrian circulation. Consistent with LRDP Mitigation HAZ-9A and Campus Standards, the construction contractor would be required to clearly designate detours and alternate routes when normal vehicle, pedestrian and bicycle routes are blocked; and to provide fencing, appropriate hazard warning signs, and flag persons as needed. For these reasons, the project would not result in significant hazards related to traffic conflicts or emergency access would be less than significant.

f) The proposed Project would not modify existing roads or paths or result in a permanent increase in vehicle or pedestrian traffic or demand for public transit. No impact would occur.

### **Summary**

Campus Standards and LRDP Mitigation Measures HAZ-9A, which is included in the proposed project, would ensure that project construction does not result in conflicts among vehicles, pedestrians and bicycles, or impede emergency access. With the inclusion of this measure, all transportation and circulation impacts of the proposed project would be less than significant and no additional mitigation is required.

---

<sup>17</sup> By comparison, the City of Santa Cruz guidelines for traffic studies require traffic impact studies for projects that are likely to generate 50 or more vehicle trips during the PM peak hour, and only requires analysis of signalized intersections if a project contributes 25 additional trips per hour during AM or PM peak hours.  
<http://www.cityofsantacruz.com/Modules/ShowDocument.aspx?documentid=21843>

## 6.17 UTILITIES & SERVICE SYSTEMS

UTILITIES & SERVICE SYSTEMS	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project...					
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the providers existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Require or result in the construction or expansion of electrical, natural gas, chilled water, or steam facilities, which would cause significant environmental impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Require or result in the construction or expansion of telecommunication facilities, which would cause significant environmental impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Utility issues and programmatic mitigation measures relevant to development under the campus' 2005 LRDP are described in Volume II, Section 4.14, of the 2005 LRDP EIR (UCSC 2006b). The following, previously adopted LRDP EIR mitigations for potential impacts related to utilities are applicable to and included in the project (the full text of the mitigation measures is included in Appendix C):

LRDP EIR Mitigation UTIL-4 (improvements to recycling and waste reduction programs)

a,b,d,e) The Project would not result in an increase in Campus population and would not install any new landscaping that would require irrigation. Therefore, the Project would not result in an increase in demand for water or for wastewater conveyance or treatment. No impact would occur.



c) As discussed in Section 6.9, above, the proposed Project would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

f,g) Project operations would not generate a substantial amount of solid waste. The 2005 LRDP EIR (Vol. 2, pp. 4.15-24 to 4.15-25). estimated that at full development under the 2005 LRDP the campus would dispose of a total of 3,585 tons per year. During the lifetime of the 2005 LRDP, Campus waste would constitute approximately two percent of the remaining capacity of the City's landfill in 2005. Furthermore, to further reduce the less-than-significant LRDP impact, the Campus implements LRDP Mitigation UTIL-4, which requires that the Campus continue to improve its recycling and waste reduction programs and identify additional means of reducing waste. UC Santa Cruz has steadily increased the percentage of its waste stream that is recycled, from 24 percent in 2002 to 59 percent in FY 2010-2011 (74 percent if construction waste is taken into account) (University of California, Santa Cruz, 2012). Demolition of the existing garden sheds and trenching in paved roads would result in construction waste, some of which would be disposed of in the City's landfill. The construction contract would require that 75 percent of construction waste be diverted from landfill disposal. Since the landfill has adequate capacity to handle projected waste disposal volumes generated from campus growth under the 2005 LRDP, including the proposed project, no expansion of the landfill would be required and the project impact would be less than significant.

h,i) As described in Section 3, above, the Project would install approximately 10,600 lf of new conduit in various locations throughout the campus. A new electrical line would be installed beneath an existing paved driveway to connect the new South Core building with an existing generator. The Project would increase Campus electrical demand but these would not necessitate any other new electrical lines or other upgrades to the Campus electrical distribution system or to the PG&E service to the campus. Natural gas service would not be provided to the new South Core building. A short segment of an existing gas line that runs beneath the building site would be rerouted. The construction-related impacts of installing these new utility lines are analyzed in sections 6.3, 6.4, 6.5, and 6.9 (*Air Quality, Biological Resources, Cultural Resources, Hydrology and Water Quality*). As discussed in those sections, construction impacts in these areas would be reduced to a less-than-significant level with mitigation identified in these sections. No additional mitigation is needed.

### **Summary**

All impacts of the proposed project related to utilities would be less than significant.

## 6.18 MANDATORY FINDINGS OF SIGNIFICANCE

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project...				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) As discussed in Section 6.4, above, construction activities for the proposed Project could result in take of individual California red-legged frog, which is known to occur near some of the Project locations. Construction activities could also harm individual special-status plants, Ohlone tiger beetles, western pond turtle, or American badger, which have not been identified in the Project area but have the potential to occur there. Implementation of TII Phase A Mitigations BIO-1, BIO-2A, BIO-2B, BIO-3A through BIO-3C, BIO-4, and BIO-5 would reduce impacts to these species to a less than significant level. Construction activities during the nesting season could potentially result in the destruction, abandonment, or failure of nests for special-status birds and non-listed bird species that are protected under the Migratory Bird Treaty Act and the state Fish and Game Code. The Project includes previously adopted LRDP EIR Mitigation BIO-11, which requires pre-construction surveys for nesting birds and avoidance measures if active nests are found, ensuring that the impact would be less than significant. The project would not have adverse impacts to special-status plants.

The Project would not disturb any known pre-historic archaeological or historic archaeological resources, and no new archaeological sites were discovered during the survey. However, the possibility for the discovery of unrecorded sites during Project construction exists, and the ground disturbing activities both within and adjacent to the Cowell Lime Works Historic district, other locations in the vicinity of historic lime industry activity, and other areas of archaeological sensitivity, may impact unknown buried cultural deposits, which is a potentially significant impact. Implementation of previously adopted LRDP Mitigation Measures CULT-1A through CULT-1H, which are applicable to and included in the Project would reduce the impact to a less-than-significant level. These mitigations provide for contractor training, construction monitoring by a qualified archaeologist, data recovery, and other measures to avoid or mitigate for impacts to cultural resources discovered during construction.

b) With the exception of indirect greenhouse gas emissions associated with the generation of electricity consumed by new telecommunications, cooling, and lighting, the adverse environmental effects of the project would be limited to construction phase impacts, including construction-related emissions of air

pollutants and greenhouse gases, harm to special-status wildlife and plant species, disturbance of nesting birds, and impacts to unknown archaeological resources. One other project planned for construction during the summer of 2013, the Infrastructure Improvements Project Phase 2 (IIP 2), may involve grading concurrent with trenching, directional boring or grading for the Proposed TII Phase A Project. As discussed in Section 6.3, above, the emissions of fugitive dust ( $PM_{10}$ ) from the two projects would not result in a significant cumulative air quality impact.

c) The Project would not have substantial adverse effects on human beings. Construction-phase emissions of air pollutants would be less than significant with implementation of LRDP Mitigations AIR-1 and AIR-6; the Project would not make a cumulatively considerable contribution to global climate change, and construction noise impacts would be less than significant because the Project incorporates LRDP Mitigation NOIS-1.

## **7 FISH & GAME DETERMINATION**

Based on the information presented in this Initial Study, the project does have a potential to adversely affect wildlife or the habitat upon which wildlife depend. Therefore, a filing fee will be paid.

Certificate of Fee Exemption

Pay Fee

## 8 REFERENCES

- BAAQMD (Bay Area Air Quality Management District). 2010. CEQA Air Quality Guidelines. May.
- Biosearch Associates. 2011. *Biotic Assessment, Telecommunications Infrastructure Upgrade Phase A Project*. August 27.
- California Air Pollution Control Officers Association. 2008. CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. January.
- California Air Resources Board. 2008. Climate Change, Proposed Scoping Plan, Pursuant to AB 32, the California Global Warming Solutions Act of 2006. October.
- California Natural Resources Agency. 2009. Final Statement of Reasons for Regulatory Action, Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97. December.
- Hill, Bob, California Division of Mines and Geology. 1997. Personal Communication with David Rosen, UC Santa Cruz. September 30.
- Lay, Chris, Director and Curator, UCSC Museum of Natural History Collections. 2012. Personal communication with Alisa Klaus, UCSC Physical Planning and Construction. September 10.
- Monterey Bay Area Unified Pollution Control District. 2008. *CEQA Air Quality Guidelines*.
- Nolan, Zinn and Associates. 2005. *Revised Geology and Geologic Hazards, Santa Cruz Campus University of California*. May.
- Pacific Crest Engineering. 2012. Geotechnical Investigation for Telecommunications Infrastructure Improvements Phase A. September.
- Paramoure, Patricia. 2012. *Archaeological Resources Study, Telecommunications Infrastructure Improvements Phase A Project*. September 1.
- San Joaquin Valley Air Pollution Control District. 2009. Final Draft Staff Report. Assessing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act. Sept. 17.
- University of California, Santa Cruz. 2006a. *University of California, Santa Cruz, Long-Range Development Plan, 2005-2020. Final Draft*. September.
- University of California, Santa Cruz. 2006b. *University of California Santa Cruz 2005-2020 Long Range Development Plan Final Environmental Impact Report*. (State Clearinghouse #2005012113). September.
- University of California, Santa Cruz. 2011. *Climate Action Plan*. October. The Climate Action Plan is posted on the web at [http://rs.acupcc.org/site\\_media/uploads/cap/935-cap\\_2.pdf](http://rs.acupcc.org/site_media/uploads/cap/935-cap_2.pdf).
- University of California, Santa Cruz. 2012. 2010-11 Annual Mitigation Monitoring (MMP) Report for the UC Santa Cruz 2005 LRDP. January. [http://lrpd.ucsc.edu/MonitoringReports/MMP\\_2010-11.pdf](http://lrpd.ucsc.edu/MonitoringReports/MMP_2010-11.pdf)
- U.S. EPA (U.S. Environmental Protection Agency). 1971. *Noise from Construction Equipment and Operations, Building Equipment and Home Appliances*. NTID 300-1. Prepared under contract by Bolt, et al., Bolt, Beranek & Newman.



**9 AGENCIES & PERSONS CONSULTED**

**University of California Santa Cruz**

Dean Fitch.....Interim Director of Campus Planning  
Kevin Foisie ..... Associate Project Manager  
Courtney Trask..... Storm Water Programs Manager

**Smith, Fause & McDonald, Inc.**

Peter McDonald

**Biosearch Associates**

Mark Allaback

**Coast Range Biological, LLC**

Tom Mahoney

**Patricia Paramoure, Archaeologist**

**10 REPORT PREPARERS**

**University of California Santa Cruz**

Alisa Klaus.....Senior Environmental Planner

**Appendix A**  
**Proposed Mitigated Negative Declaration**



## PROPOSED MITIGATED NEGATIVE DECLARATION

<b>Lead Agency:</b>	University of California
<b>Project Proponent:</b>	University of California Santa Cruz
<b>Project Location:</b>	UC Santa Cruz main campus. A new South Core building would be constructed in the Campus Facilities area near the southern end of the campus. The project also includes upgrades to the interior telecommunications infrastructure in 28 existing buildings in the western and central campus, and installation of new telecommunications conduit, fiber, and vaults among various locations on the campus.
<b>Project Description:</b>	Telecommunications Infrastructure Improvements (TII) Phase A Project consists of three major elements. First, the Project would construct interior telecommunications infrastructure upgrades and associated remodeling in 28 buildings in the central and western portions of the campus. Second, the Project would construct a new, redundant Minimum Point of Entry in a new, 1,100-sf building in the Campus Facilities area in the southern campus. The third project element consists of upgrades to fiber optic and copper cable in existing conduit in between buildings in various locations on the campus, installation of cable in new conduit, and construction of telecommunications vaults along the new conduit. The Project would install a total of approximately 10,600 linear feet (lf) of new conduit.
<b>Mitigation Measures:</b>	TII Phase A Mitigation Measures BIO-1, BIO-2A, BIO-3, BIO-4A, BIO-4B, BIO-5, and BIO-6 require pre-construction surveys and other measures to avoid impacts to special-status wildlife and plant species.
<b>Determination:</b>	In accordance with CEQA, an Initial Study has been prepared by UC Santa Cruz that evaluates the environmental effects of the proposed project. On the basis of the project's Initial Study the campus has determined that, with implementation of the mitigation measures listed above, the proposed project would not have a potentially significant effect on the environment.
<b>Public Review:</b>	In accordance with Section 15073 of the CEQA Guidelines, the Initial Study for the project was circulated for public and agency review from October 3, 2012 to November 2, 2012.

**Appendix B**  
**2005 LRDP Mitigation Measures**  
**Incorporated as Part of the Proposed Project**

**2005 LRDP EIR Mitigation Measures Incorporated in the Proposed Project**

**4.1 Aesthetics**

**AES-5A** Prior to design approval of development projects under the 2005 LRDP, the UC Santa Cruz Design Advisory Board shall review project designs for consistency with the valued elements of the visual landscape identified in the 2005 LRDP, and the character of surrounding development so that the visual character and quality of the project area are not substantially degraded.

**AES-6B** Lighting for new development projects shall be designed to include directional lighting methods shielded to minimize light spillage and minimize atmospheric light pollution. This lighting should be compatible with the visual character of the project site and meet the UC Regents' Green Building Policies.

**AES-6C** As part of the design review process, the UC Santa Cruz Design Advisory Board shall consider project-related light and glare and the Campus shall require the incorporation of measures into the project design to limit both to the extent allowed by code.

**AES-6E** As part of the design review process, UC Santa Cruz Design Advisory Board shall review outdoor lighting fixtures for roads, pathways, and parking facilities to ensure that the minimum amount of lighting needed to achieve safe routes is used, and to ensure that the proposed illumination limits adverse effect on nighttime views.

**4.3 Air Quality**

**AIR-1** The Campus shall apply standard MBUAPCD-recommended mitigation measures during construction of new facilities under the 2005 LRDP, as appropriate:

- Water all active construction areas at least twice daily.
- Prohibit all grading activities during periods of high wind (over 15 mph).
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Apply non-toxic binders (e.g., latex acrylic copolymer), as appropriate, to exposed areas after cut and fill operations and hydroseed area.
- Require haul trucks to maintain at least 2 feet of freeboard.
- Cover all trucks hauling dirt, sand, or loose materials.
- Plant vegetative ground cover in disturbed areas as soon as possible.
- Cover inactive storage piles.
- Install wheel washers at the entrances to construction sites for all exiting trucks.
- Pave all roads on construction sites.
- Damp-sweep streets if visible soil material is carried out from the construction site.
- Post a publicly visible sign that specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and take corrective action within 48 hours. The phone number of the Monterey Bay Unified Air Pollution Control District shall be visible to ensure compliance with Rule 402.

	<ul style="list-style-type: none"> <li>• Each project shall limit the area under construction at any one time.</li> </ul>
<b>AIR-6</b>	<p>The Campus will minimize construction emissions by implementing measures such as those listed below:</p> <ul style="list-style-type: none"> <li>• Require the use of cleaner fuels (e.g., natural gas, ethanol) in construction equipment</li> <li>• Require that construction contractors use electrical equipment where possible</li> <li>• Require construction contractors to minimize the simultaneous operation of multiple pieces equipment at a construction site</li> <li>• Minimize idling time to a maximum of 5 minutes when construction equipment is not in use</li> <li>• Schedule operations of construction equipment to minimize exposure to emissions from construction equipment</li> </ul>
<b>4.4 Biological Resources</b>	
<b>BIO-6</b>	<p>To avoid or minimize the introduction or spread of noxious weeds, sudden oak death or pitch canker into uninfested areas, UC Santa Cruz shall incorporate the following measures into project plans and specifications for work on the north campus to be conducted under the 2005 LRDP.</p> <ul style="list-style-type: none"> <li>• Only certified, weed-free materials shall be used for erosion control.</li> <li>• UC Santa Cruz shall identify appropriate best management practices to avoid the dispersal of noxious weeds, sudden oak death and pitch canker. The Campus shall then include appropriate practices in Campus Standards for construction to be implemented during construction in all north campus areas. Typical best management practices include the use of weed-free erosion control materials and revegetation of disturbed areas with seed mixes that include native species and exclude invasive non-natives. Best management practices to avoid the spread of sudden oak death and pitch pine canker will be determined in consultation with the California Department of Forestry.</li> <li>• In uninfested areas, topsoil removed during excavation shall be stockpiled and used to refill the trench on site if it is suitable as backfill</li> </ul>
<b>BIO-11</b>	<p>Prior to construction or site preparation activities, a qualified biologist shall be retained to conduct nest surveys at each site that has appropriate nesting habitat. The survey shall be required for only those projects that will be constructed during the nesting/breeding season of sharp-shinned hawk, golden eagle, northern harrier, long-eared owl, or white-tailed kite (typically February 1 through August 31).</p> <ul style="list-style-type: none"> <li>• The survey area shall include all potential nesting habitat, including mixed evergreen forest, redwood forest, and isolated trees that are within 200 feet of the proposed project grading boundaries. The survey shall be conducted no more than 14 days prior to commencement of construction activities.</li> <li>• If active nests of sharp-shinned hawk, Cooper's hawk, golden eagle, northern harrier, Vaux's swift, long-eared owl, and white-tailed kite (or other species protected under the Migratory Bird Treaty Act and the California Fish and Game Code) are present in the construction zone or within 200 feet of the construction zone, a temporary fence shall be erected at a distance of 200 feet around the nest site (or less if determined to be appropriate by the biologist according to the species and site conditions). Clearing and construction within the fenced area shall be postponed until juveniles have fledged and there is no evidence of a second nesting attempt as determined by the biologist.</li> </ul>
<b>BIO-12A</b>	<p>Prior to any ground disturbance of grassland habitats on the lower campus, a qualified biologist will conduct a preconstruction survey to identify western burrowing owls and/or potential habitat features (e.g., burrows) and to evaluate use by burrowing owls in accordance with current CDFG survey guidelines (CDFG 1995).</p> <p>Surveys will be conducted within the proposed disturbance footprint and a 500-foot radius of the disturbance boundary of each proposed project. For construction activities occurring within the western burrowing owl habitat (whether during breeding or non-breeding seasons), surveys will be conducted within 30 days prior to construction. The surveys will document whether burrowing owls are nesting on or directly adjacent to disturbance areas. Survey results will be valid only for the season during which the survey is conducted. If western burrowing owls are found during the breeding or nonbreeding season, LRDP Mitigation BIO-12B will be implemented.</p>

<b>BIO-12B</b>	<p>If burrowing owl nest sites cannot be avoided, the Campus will conduct passive relocation by installing one-way doors in suitable burrow entrances that are used or may be used by the owls. This measure is described in detail below.</p> <p>In order to displace burrowing owls without destroying eggs, young, or adults, one-way doors will be installed on owl burrows before February 1 prior to disturbance, and each burrow will be monitored following CDFG's protocol (CDFG 1995). Suitable artificial burrows will be created nearby according to the conservation measures established for this species. The protocol includes monitoring the burrow for a 48-hour period after the one-way doors are installed. The doors will be checked every 24 hours following installation to determine whether they are still intact. If the one-way door is still correctly installed after a continuous 48-hour period (i.e., no animals have dug up the door and rendered it useless), then the one-way door will be removed and the burrows will be excavated using hand tools and plastic tubing to maintain an escape route for any animals still inside the burrow.</p>
<b>4.5 Cultural Resources</b>	
<b>CULT-1A</b>	As early as possible in the project planning process, the Campus shall define the project's area of potential effects (APE) for archaeological resources based on the extent of ground disturbance and site modifications anticipated for the proposed project. The Campus shall also review confidential resource records <sup>18</sup> to determine whether complete intensive archaeological survey has been performed on the site and whether any previously recorded cultural resources are present.
<b>CULT-1B</b>	Where native soils will be disturbed, the Campus shall provide and shall require contractor crews to attend an informal training session prior to the start of earth moving, regarding how to recognize archaeological sites and artifacts. In addition, campus employees whose work routinely involves disturbing the soil shall be informed how to recognize evidence of potential archaeological sites and artifacts. Prior to disturbing the soil, contractors shall be notified that they are required to watch for potential archaeological sites and artifacts and to notify the campus if any are found. In the event of a find, the Campus shall implement LRDP Mitigation CULT-1G, below.
<b>CULT-1C</b>	For project sites that have not been subject to prior complete intensive archaeological survey, the Campus shall ensure that a complete intensive surface survey is conducted by a qualified archaeologist during project planning and design and prior to soil disturbing activities. If an archaeological deposit is discovered, the archaeologist will prepare a site record and file it with the California Historical Resource Information System. In the event of a find within the area of potential effects, the Campus shall consult with a qualified archaeologist to design and conduct an archaeological subsurface investigation and/or a construction monitoring plan of the project site to ascertain the extent of the deposit relative to the project's area of potential effects, to ensure that impacts to potential buried resources are avoided.
<b>CULT-1D</b>	If it is determined that the resource extends into the project's area of potential effects, the Campus shall ensure that the resource is evaluated by a qualified archaeologist, who will determine whether it qualifies as a historical resource or a unique archaeological resource under the criteria of CEQA Guidelines §15064.5. This evaluation may require additional research, including subsurface testing. If the resource does not qualify, or if no resource is present within the project APE, this will be reported in the environmental document and no further mitigation will be required unless there is a discovery during construction.
<b>CULT-1E</b>	If a resource within the project's area of potential effects is determined to qualify as an historical resource or a unique archaeological resource (as defined by CEQA), the Campus shall consult with the qualified archaeologist to consider means of avoiding or reducing ground disturbance within the site boundaries, including minor modifications of building footprint, landscape modification, the placement of protective fill, or other means that will permit avoidance or substantial preservation in place of the resource.
<b>CULT-1F</b>	If avoidance or substantial preservation in place is not possible for an archaeological site that has been determined to meet CEQA significance criteria, the Campus shall retain a qualified archaeologist who, in consultation with the Campus, shall prepare a research design, and plan and conduct archaeological data recovery and monitoring that will capture those categories of data for which the site is significant, prior to or during development of the site. The Campus shall also ensure that appropriate technical analyses are performed, and a full written report prepared and filed with the California Historical Resources Information System, and also shall provide for the permanent curation of recovered materials.
<b>CULT-1G</b>	If an archaeological resource is discovered during construction (whether or not an archaeologist is present), all soil disturbing work within 100 feet of the find shall cease. The Campus shall contact a qualified archaeologist to provide and implement a plan for survey, subsurface investigation as needed to define the extent of the deposit, and assessment of the remainder of the site within the project area to determine whether the resource is significant and would be affected by the

<sup>18</sup> Monterey Bay Archaeological Archives, Department of Anthropology, UC Santa Cruz and California Historical Resources Information System. Northwest Information Center, Sonoma State University.

	project. LRDP Mitigation CULT-1F shall also be implemented.
<b>CULT-1H</b>	If, in the opinion of the qualified archaeologist and in light of the data available, the significance of the site is such that data recovery cannot capture the values that qualify the site for inclusion on the CRHR, the campus shall reconsider project plans in light of the high value of the resource, and implement more substantial modifications to the proposed project that would allow the site to be preserved intact, such as project redesign, placement of fill, or project relocation or abandonment. If no such measures are feasible, the Campus shall implement LRDP Mitigation CULT-3A
<b>CULT-2B</b>	As early as possible in the project planning process, the Campus shall define the project's area of potential effects (APE) for historic structures. The Campus shall determine the potential for the project to result in impacts to or alteration of historic structures, based on the extent of site and building modifications anticipated for the proposed project.
<b>CULT-4C</b>	In the event of a discovery on campus of human bone, suspected human bone, or a burial, the Campus shall ensure that all excavation in the vicinity halts immediately and the area of the find is protected until a qualified archaeologist determines whether the bone is human. If the qualified archaeologist determines the bone is human, or if a qualified archaeologist is not present, the Campus will notify the Santa Cruz County Coroner of the find and protect the find without further disturbance until the Coroner has made a finding relative to PRC 5097 procedures. If it is determined that the find is of Native American origin, the Campus will comply with the provisions of PRC §5097.98 regarding identification and involvement of the Native American Most Likely Descendant (MLD).
<b>CULT-5A</b>	During project planning, the Project Manager shall consult the most recent Campus Soils and Geology map to determine whether the proposed project is underlain by a formation that is known to be sensitive for paleontological resources.
<b>CULT-5C</b>	In the event of a discovery of a paleontological resource on campus, work within 50 feet of the find shall halt until a qualified paleontologist has examined and assessed the find and, if the resource is determined to be a unique paleontological resource, the resource is recovered. The Campus shall ensure that all finds are adequately documented, analyzed, and curated at an appropriate institution.
<b>CULT-5D</b>	In the event that a proposed project would result in impacts to a unique paleontological resource, the project planning team shall work together to reduce impacts to the find through design and construction modifications, to the extent feasible.
<b>4.6 Geology and Soils</b>	
<b>GEO-1</b>	Where existing information is not adequate, detailed geotechnical studies shall be performed for areas that will support buildings or foundations. Recommendations of the geotechnical investigations will be incorporated into project design.
<b>4.7 Hazards and Hazardous Materials</b>	
<b>HAZ-7</b>	The Campus shall survey buildings for potential contamination before any demolition or renovation work is performed. If contamination is discovered, appropriate remediation will be completed.
<b>HAZ-9A</b>	The Campus shall continue to include the following requirements in its Campus Standards and implement them under the 2005 LRDP: <ul style="list-style-type: none"> <li>• Construction work shall be conducted so as to ensure the least possible obstruction to traffic.</li> <li>• Contractors shall notify the University's Representative at least two weeks before any road closure.</li> <li>• When paths, lanes, or roadways are blocked, detour signs must be installed to clearly designate an alternate route. Fire hydrants shall be kept accessible to fire fighting equipment at all times. To ensure adequate access for emergency vehicles when construction projects would result in temporary lane or roadway closures, Physical Plant and Physical Planning and Construction shall continue to require that construction and maintenance project managers notify campus police and fire departments and the campus dispatchers of the closures and alternative travel routes.</li> </ul>
<b>4.8 Hydrology and Water Quality</b>	
<b>HYD-3C</b>	Each new capital project proposed under the 2005 LRDP that creates new impervious surface shall include design measures to ensure that post-development peak flows from 2-, 5- and 10-year storms do not exceed the 2-, 5-, and 10-year pre-development peak flows and that post-development peak flows from a 25-year storm do not exceed the pre-development peak flow from a 10-year storm.
<b>HYD-3D</b>	The Campus shall require each new capital project to include design measures to minimize, to the maximum extent practicable, the increase in the volume of storm water runoff discharged from the project site to sinkholes or natural drainages. These design measures shall include features that maximize infiltration and dissipation of runoff, preferably near the area where new runoff is generated, and may include, but will not be limited to: vegetated swales, bioretention areas, infiltration trenches and basins, level spreaders, permeable pavement, minimizing directly connected impervious surfaces, storage and re-use of roof runoff, and green roofs. Within one year following approval of the 2005 LRDP, the

Campus shall provide a protocol for design consultants to use in demonstrating that measures to reduce runoff are included in the project design to the maximum extent practicable	
<b>4.10 Noise</b>	
<b>NOIS-1</b>	<p>Prior to initiation of construction of a specific development project, the Campus shall approve a construction noise mitigation program that shall be implemented for each construction project. This shall include but not be limited to the following:</p> <ul style="list-style-type: none"> <li>• Construction equipment used on campus is properly maintained and has been outfitted with feasible noise-reduction devices to minimize construction-generated noise.</li> <li>• Laydown and construction vehicle staging areas shall be located at least 100 feet away from noise-sensitive land uses as feasible.</li> <li>• Stationary noise sources such as generators or pumps shall be located at least 100 feet away from noise-sensitive land uses as feasible.</li> <li>• Notices of the dates and hours of anticipated construction shall be posted in academic, administrative, and residential buildings within 100 feet of construction noise sources at least a week before the start of each construction project.</li> <li>• Loud construction activity (i.e., construction activity such as jackhammering, concrete sawing, asphalt removal, and large-scale grading operations) within 100 feet of a residential or academic building shall not be scheduled during finals week.</li> <li>• Loud construction activity as described above within 100 feet of an academic or residential use shall, to the extent feasible, be scheduled during holidays, Thanksgiving break, Christmas break, Spring break, or Summer break.</li> <li>• Loud construction activity within 100 feet of a residential building shall be restricted to the hours between 7:30 AM and 7:30 PM, Monday through Saturday.</li> <li>• Loud construction activity within 100 feet of an academic building shall be scheduled to the extent feasible on weekends.</li> </ul>
<b>NOIS-2</b>	Campus Standards shall be amended to include a requirement to be imposed on all campus contracts that only City-designated truck routes shall be used for contractor truck trips accessing the campus.
<b>4.14 Utilities</b>	
<b>UTIL-4</b>	The Campus will continue to improve its recycling and waste reduction programs and identify additional means of reducing waste.

**Appendix C**  
**Proposed Mitigation Monitoring Plan**



## PROPOSED MITIGATION MONITORING PROGRAM

CEQA requires that the Lead Agency establish a program to report on and monitor measures adopted as part of the environmental review process to mitigate or avoid significant effects on the environment. This Mitigation Monitoring Program (MMP) is designed to ensure that the project-specific mitigation measures identified in this Initial Study are implemented.

The MMP for the proposed project, as outlined in the following table, describes monitoring and reporting procedures, monitoring responsibilities, and monitoring schedules for the project-specific mitigation measures identified in the Initial Study. Once completed, all monitoring actions will be reported in writing to or by the UC Santa Cruz Physical Planning and Construction, which will maintain mitigation-monitoring records for the proposed project. The MMP will be considered by the University in conjunction with project review and will be included as a condition of project approval.

The components of the MMP include:

- a) **Mitigation Measure:** The mitigation measures provide mitigation for the proposed project.
- b) **Monitoring and Reporting Procedure:** Identifies the actions that must be completed for the mitigation measures to be implemented.
- c) **Mitigation Timing:** Identifies the timing for implementation of each action associated with the mitigation measures in order to effectively accomplish the intended outcome.
- d) **Monitoring Responsibilities:** Identifies the UC Santa Cruz entity responsible for undertaking the required action and monitoring the mitigation measure.

**Merrill Residence Halls Capital Renewal Mitigation Monitoring Program**

Project-Specific Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing	Mitigation Responsibility
<p><b>THI Phase A Mitigation BIO-1:</b> A qualified botanist shall conduct a focused plant survey for target special-status species within 50 feet of ground disturbance in Non-Native Grassland during the spring blooming period prior to construction. If no special-status species are observed during the focused survey, no additional mitigation is necessary. If special-status plants are observed, the population shall be mapped and quantified and a suitable buffer zone (based on species requirements, proximity to the work area and other site specific factors) established, along with other protection measures, such as fencing installed around the population to protect it from disturbance. <u>Any bore pit or trench that is within the buffer shall be moved to a location outside the buffer.</u></p>	<p>Conduct survey. Establish buffer and protection measures, and adjust bore pit or trench location as warranted. Document survey and implementation of avoidance measures in project file.</p>	<p>Before construction begins. Maintain fence throughout construction.</p>	<p>UCSC Physical Planning and Construction</p>
<p><b>THI Phase A Mitigation BIO-2.</b> Prior to construction, during the late spring, when larval burrows are apparent and late-season adult beetles may still be active, a qualified biologist shall conduct a survey for OTB in the proposed work areas. The survey shall include bore pit locations and trench and directional drilling alignments within potential OTB habitat. If any burrows are detected, one or more of the following additional measures would be implemented, in consultation with a qualified biologist and USFWS:</p> <ul style="list-style-type: none"> <li>• The trench or bore pit location will be moved to a location where construction activity would not affect OTB;</li> <li>• Construction fencing will be installed around the new work area to ensure that equipment does not encroach on areas occupied by OTB;</li> <li>• A qualified biologist will monitor surface disturbance;</li> <li>• The depth of the borehole will be increased</li> </ul> <p>Alternatively, the Campus may implement one or more other measures that would achieve the same result, if</p>	<p>Conduct survey. Adjust bore pit or trench location as warranted. Implement other avoidance measures as recommended by biologist. Document survey and implementation of avoidance measures in project file.</p>	<p>Before construction begins. Implement biologist's recommendations throughout construction.</p>	<p>UCSC Physical Planning and Construction</p>

Project-Specific Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing	Mitigation Responsibility
recommended by the USFWS.			
<p><b>TII Phase Mitigation BIO-3.</b> The following measures will be taken to prevent release of drilling fluid to the environment:</p> <ul style="list-style-type: none"> <li>• Excess drilling fluids shall be contained at entry and exit points until they are recycled or removed from the site or vacuumed during drilling operations. Ensure that entry and exit pits are of sufficient size to contain the expected return of drilling fluids and soil cuttings.</li> <li>• Secondary containment of the pits shall be provided to contain any seepage and minimize any migration of the mud from the work area. This containment system may consist of straw bales and silt fencing around the pit.</li> <li>• To determine if an inadvertent release has occurred, horizontal directional drilling activities will constantly be monitored on this project, through visual inspection of the drill path and continuous examination of drilling mud pressure.</li> <li>• Should a frac-out occur, drilling shall halt immediately and the spilled material will be collected using a vacuum pump or other equipment. The Contractor will determine and implement any modifications to the drilling technique, including deepening the bore path, adjusting the alignment, or altering the composition of drilling fluid (e.g. thickening of mud by increasing bentonite content) to minimize or prevent further releases of drilling mud.</li> </ul>	<p>Include mitigation requirements in bid documents. Monitor compliance. Document compliance in project file.</p>	<p>Before project goes out to bid. UCSC inspector monitor compliance throughout construction.</p>	<p>UCSC Physical Planning and Construction</p>
<p><b>TII Phase A Mitigation BIO-4A.</b> Initial ground disturbance within 300 feet of Moore Creek and the Arboretum Pond will take place between May 1 and October 15.</p>	<p>Incorporate mitigation into project schedule, and include in bid documents.</p>	<p>Before project goes out to bid.</p>	<p>UCSC Physical Planning and Construction</p>
<p><b>TII Phase A Mitigation BIO-4B.</b> When work will take place within 300 feet of Moore Creek or the Arboretum Pond, the a qualified biologist will perform the following tasks:</p>	<p>Biologist conduct inspections.</p>	<p>During construction.</p>	<p>UCSC Physical Planning and</p>

Project-Specific Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing	Mitigation Responsibility
<p>(1) A qualified biologist shall inspect the project site before ground disturbance and during any initial vegetation, woody debris, tree removal, or other initial ground-disturbing activities;</p> <p>(2) Following vegetation removal, frog exclusion fence shall be constructed around the entire work area. Three-foot nylon construction silt-fencing or similar material shall be buried a minimum of 6 inches and extend a minimum of 2.5 feet above grade. The fencing material shall be maintained such that it is vertical without any sagging, and it shall completely enclose the work area; additional wooden stakes shall be used as needed. If construction personnel must remove a portion of the fencing during the work day for access, it shall be replaced prior to nightfall. Construction and maintenance of the fence shall be monitored by a qualified biologist;</p> <p>(3) A qualified biologist shall inspect each work area daily prior to construction. If a CRLF is observed at any time before or during project activities, all activities will cease at that location until the qualified biologist determines that the species has departed; no CRLF shall be handled or relocated.</p>	<p>Construct and maintain fencing under biologist's supervision.</p> <p>Document inspections and exclusion fence construction in project file.</p>		Construction
<p><b>III Phase A Mitigation BIO-5:</b> Prior to ground disturbing activities at project sites 8-10, a qualified biologist will inspect the work area and land within 50 feet for evidence of WPT nesting. If a nest is found, CDFG will be contacted for guidance on establishing an appropriate buffer or other measures to avoid disturbance of the nest.</p>	<p>Biologist conduct survey.</p> <p>Consult with CDFG if nests are found.</p> <p>Document survey results, consultation with CDFG, and implementation of avoidance measures in project file.</p>	<p>Before construction begins. Implement avoidance measures throughout construction as warranted.</p>	UCSC Physical Planning and Construction

<b>Project-Specific Mitigation Measure</b>	<b>Monitoring and Reporting Procedure</b>	<b>Mitigation Timing</b>	<b>Mitigation Responsibility</b>
<p><b>TII Phase A Mitigation BIO-6:</b> Prior to project construction, a qualified biologist shall inspect the project work area and adjacent areas within 100 feet for badger dens. If an occupied den is located, the bore or trench site shall be relocated to avoid impacts to the den by a minimum of 100 feet.</p>	<p>Conduct survey. Adjust bore pit or trench location as warranted. Document survey and implementation of avoidance measures in project file.</p>	<p>Before construction begins.</p>	<p>UCSC Physical Planning and Construction</p>

**Appendix D**  
**CalEEMod Results**

**TII Phase A  
Santa Cruz County, Annual**

**1.0 Project Characteristics**

---

**1.1 Land Usage**

Land Uses	Size	Metric
University/College (4Yr)	0	Employee
Other Asphalt Surfaces	0.16	Acre
Other Non-Asphalt Surfaces	0.04	Acre

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>		<b>Utility Company</b>	Pacific Gas & Electric Company
<b>Climate Zone</b>	4		2.2		
		<b>Precipitation Freq (Days)</b>	61		

**1.3 User Entered Comments**

Project Characteristics -

Land Use - "Educational": South Core building site. "Parking/Other Asphalt Surfaces": roads where trenching will occur. "Parking/Other Non-Asphalt Surfaces": directional boring in unpaved areas.

Construction Phase - Construction phase lengths from project manager.

Off-road Equipment -

Off-road Equipment - Construction of one-story wood building will require minimal heavy equipment

Off-road Equipment - Buildings to be demolished are small wooden sheds, and site will not accommodate additional large equipment.

Off-road Equipment - Only minor grading required.

### TII Phase A

Off-road Equipment - All paving will be asphalt. Roller not required for paving trench.

Off-road Equipment - No room for grader; very little grading is needed. Grading will be done by hand.

Off-road Equipment - Trenching in paved roads requires saw and backhoe. Directional boring requires drill rig. Both types of work would proceed at same

Trips and VMT - Worker trips added for Bldg Const and Arch Coating (default estimated 0). 1 vendor trip per day added for building construction.

On-road Fugitive Dust - Directional boring equipment will be hauled partly on unpaved fire road.

Demolition -

Grading - Site preparation only required for South Core building.

Construction Off-road Equipment Mitigation -

## 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					
2013	0.09	0.54	0.47	0.00	0.01	0.04	0.05	0.00	0.04	0.04	0.00	62.87	62.87	0.01	0.00	63.01
<b>Total</b>	<b>0.09</b>	<b>0.54</b>	<b>0.47</b>	<b>0.00</b>	<b>0.01</b>	<b>0.04</b>	<b>0.05</b>	<b>0.00</b>	<b>0.04</b>	<b>0.04</b>	<b>0.00</b>	<b>62.87</b>	<b>62.87</b>	<b>0.01</b>	<b>0.00</b>	<b>63.01</b>

#### 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					
2013	0.09	0.54	0.47	0.00	0.01	0.04	0.05	0.00	0.04	0.04	0.00	62.87	62.87	0.01	0.00	63.01
<b>Total</b>	<b>0.09</b>	<b>0.54</b>	<b>0.47</b>	<b>0.00</b>	<b>0.01</b>	<b>0.04</b>	<b>0.05</b>	<b>0.00</b>	<b>0.04</b>	<b>0.04</b>	<b>0.00</b>	<b>62.87</b>	<b>62.87</b>	<b>0.01</b>	<b>0.00</b>	<b>63.01</b>



TII Phase A

**3.0 Construction Detail**

**3.1 Mitigation Measures Construction**

- Use Soil Stabilizer
- Replace Ground Cover
- Water Exposed Area

**3.2 Demolition - 2013**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	0.70	0.70	0.00	0.00	0.70
<b>Total</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.70</b>	<b>0.70</b>	<b>0.00</b>	<b>0.00</b>	<b>0.70</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.14	0.00	0.00	0.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.06
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.20</b>	<b>0.20</b>	<b>0.00</b>	<b>0.00</b>	<b>0.20</b>

**Mitigated Construction On-Site**

**TII Phase A**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	0.70	0.70	0.00	0.00	0.70
<b>Total</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.70</b>	<b>0.70</b>	<b>0.00</b>	<b>0.00</b>	<b>0.70</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.14	0.00	0.00	0.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.06
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.20</b>	<b>0.20</b>	<b>0.00</b>	<b>0.00</b>	<b>0.20</b>

**3.3 Site Preparation - 2013**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.19	0.19	0.00	0.00	0.19
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.19</b>	<b>0.19</b>	<b>0.00</b>	<b>0.00</b>	<b>0.19</b>

**Unmitigated Construction Off-Site**

**TII Phase A**

	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.19	0.19	0.00	0.00	0.19
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.19</b>	<b>0.19</b>	<b>0.00</b>	<b>0.00</b>	<b>0.19</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>

**3.4 Grading - 2013**

**TII Phase A**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	0.70	0.70	0.00	0.00	0.70
<b>Total</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.70</b>	<b>0.70</b>	<b>0.00</b>	<b>0.00</b>	<b>0.70</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.06
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.06</b>	<b>0.06</b>	<b>0.00</b>	<b>0.00</b>	<b>0.06</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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	0.70	0.70	0.00	0.00	0.70
<b>Total</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.70</b>	<b>0.70</b>	<b>0.00</b>	<b>0.00</b>	<b>0.70</b>

**Mitigated Construction Off-Site**

**TII Phase A**

	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.06
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.06</b>	<b>0.06</b>	<b>0.00</b>	<b>0.00</b>	<b>0.06</b>

**3.5 Building Construction - 2013**

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	0.02	0.16	0.13	0.00		0.01	0.01		0.01	0.01	0.00	16.86	16.86	0.00	0.00	16.90
<b>Total</b>	<b>0.02</b>	<b>0.16</b>	<b>0.13</b>	<b>0.00</b>		<b>0.01</b>	<b>0.01</b>		<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>16.86</b>	<b>16.86</b>	<b>0.00</b>	<b>0.00</b>	<b>16.90</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	1.03	0.00	0.00	1.04
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13	1.13	0.00	0.00	1.13
<b>Total</b>	<b>0.00</b>	<b>0.01</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.16</b>	<b>2.16</b>	<b>0.00</b>	<b>0.00</b>	<b>2.17</b>

Mitigated Construction On-Site

**TII Phase A**

	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	0.02	0.16	0.13	0.00		0.01	0.01		0.01	0.01	0.00	16.86	16.86	0.00	0.00	16.90
<b>Total</b>	<b>0.02</b>	<b>0.16</b>	<b>0.13</b>	<b>0.00</b>		<b>0.01</b>	<b>0.01</b>		<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>16.86</b>	<b>16.86</b>	<b>0.00</b>	<b>0.00</b>	<b>16.90</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	1.03	0.00	0.00	1.04
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13	1.13	0.00	0.00	1.13
<b>Total</b>	<b>0.00</b>	<b>0.01</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.16</b>	<b>2.16</b>	<b>0.00</b>	<b>0.00</b>	<b>2.17</b>

**3.6 Architectural Coating - 2013**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.01					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.64	0.64	0.00	0.00	0.64
<b>Total</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>		<b>0.00</b>	<b>0.00</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.64</b>	<b>0.64</b>	<b>0.00</b>	<b>0.00</b>	<b>0.64</b>

**Unmitigated Construction Off-Site**

**TII Phase A**

	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.04
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.04</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.04</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	0.01					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.64	0.64	0.00	0.00	0.64
<b>Total</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>		<b>0.00</b>	<b>0.00</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.64</b>	<b>0.64</b>	<b>0.00</b>	<b>0.00</b>	<b>0.64</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.04
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.04</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.04</b>

**3.7 Trenching - 2013**

**TII Phase A**

**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	0.04	0.28	0.23	0.00		0.02	0.02		0.02	0.02	0.00	33.24	33.24	0.00	0.00	33.30
<b>Total</b>	<b>0.04</b>	<b>0.28</b>	<b>0.23</b>	<b>0.00</b>		<b>0.02</b>	<b>0.02</b>		<b>0.02</b>	<b>0.02</b>	<b>0.00</b>	<b>33.24</b>	<b>33.24</b>	<b>0.00</b>	<b>0.00</b>	<b>33.30</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.01
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.01</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	0.04	0.28	0.23	0.00		0.02	0.02		0.02	0.02	0.00	33.24	33.24	0.00	0.00	33.30
<b>Total</b>	<b>0.04</b>	<b>0.28</b>	<b>0.23</b>	<b>0.00</b>		<b>0.02</b>	<b>0.02</b>		<b>0.02</b>	<b>0.02</b>	<b>0.00</b>	<b>33.24</b>	<b>33.24</b>	<b>0.00</b>	<b>0.00</b>	<b>33.30</b>

**Mitigated Construction Off-Site**



**TII Phase A**

	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.01
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.01</b>

**3.8 Paving - 2013**

**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	0.01	0.07	0.04	0.00		0.01	0.01		0.01	0.01	0.00	5.75	5.75	0.00	0.00	5.77
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>0.01</b>	<b>0.07</b>	<b>0.04</b>	<b>0.00</b>		<b>0.01</b>	<b>0.01</b>		<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>5.75</b>	<b>5.75</b>	<b>0.00</b>	<b>0.00</b>	<b>5.77</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.31	0.00	0.00	0.31
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.31</b>	<b>0.31</b>	<b>0.00</b>	<b>0.00</b>	<b>0.31</b>

**TII Phase A**

**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	0.01	0.07	0.04	0.00		0.01	0.01		0.01	0.01	0.00	5.75	5.75	0.00	0.00	5.77
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>0.01</b>	<b>0.07</b>	<b>0.04</b>	<b>0.00</b>		<b>0.01</b>	<b>0.01</b>		<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>5.75</b>	<b>5.75</b>	<b>0.00</b>	<b>0.00</b>	<b>5.77</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.31	0.00	0.00	0.31
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.31</b>	<b>0.31</b>	<b>0.00</b>	<b>0.00</b>	<b>0.31</b>

**TII Phase A**

**1.0 Project Characteristics**

---

**1.1 Land Usage**

Land Uses	Size	Metric
University/College (4Yr)	0	Employee
Other Asphalt Surfaces	0.16	Acre
Other Non-Asphalt Surfaces	0.04	Acre

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Utility Company</b>	Pacific Gas & Electric Company
<b>Climate Zone</b>	4	<b>Precipitation Freq (Days)</b>	61		

**1.3 User Entered Comments**

Project Characteristics -

Land Use - "Educational": South Core building site. "Parking/Other Asphalt Surfaces": roads where trenching will occur. "Parking/Other Non-Asphalt Surfaces": directional boring in unpaved areas.

Construction Phase - Construction phase lengths from project manager.

Off-road Equipment -

Off-road Equipment - Construction of one-story wood building will require minimal heavy equipment

Off-road Equipment - Buildings to be demolished are small wooden sheds, and site will not accommodate additional large equipment.

Off-road Equipment - Only minor grading required.

Off-road Equipment - All paving will be asphalt. Roller not required for paving trench.

Off-road Equipment - No room for grader; very little grading is needed. Grading will be done by hand.

Off-road Equipment - Trenching in paved roads requires saw and backhoe. Directional boring requires drill rig. Both types of work would proceed at same time.  
Trips and VMT - Worker trips added for Bldg Const and Arch Coating (default estimated 0). 1 vendor trip per day added for building construction.

On-road Fugitive Dust - Directional boring equipment will be hauled partly on unpaved fire road.

Demolition -

Grading - Site preparation only required for South Core building.

Construction Off-road Equipment Mitigation -

## 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					
2013	5.60	9.33	8.60	0.01	0.30	0.78	0.84	0.00	0.78	0.78	0.00	1,301.54	0.00	0.13	0.00	1,304.37
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

#### 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					
2013	5.60	9.33	8.60	0.01	0.21	0.78	0.84	0.00	0.78	0.78	0.00	1,301.54	0.00	0.13	0.00	1,304.37
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

## 3.0 Construction Detail

### 3.1 Mitigation Measures Construction

Use Soil Stabilizer  
 Replace Ground Cover  
 Water Exposed Area

### 3.2 Demolition - 2013

#### 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					0.17	0.00	0.17	0.00	0.00	0.00						0.00
Off-Road	0.42	2.73	2.11	0.00		0.23	0.23		0.23	0.23		309.80		0.04		310.58
<b>Total</b>	<b>0.42</b>	<b>2.73</b>	<b>2.11</b>	<b>0.00</b>	<b>0.17</b>	<b>0.23</b>	<b>0.40</b>	<b>0.00</b>	<b>0.23</b>	<b>0.23</b>		<b>309.80</b>		<b>0.04</b>		<b>310.58</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	0.05	0.39	0.34	0.00	0.10	0.01	0.11	0.00	0.01	0.01		61.45		0.00		61.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		29.93		0.00		29.99
<b>Total</b>	<b>0.08</b>	<b>0.42</b>	<b>0.64</b>	<b>0.00</b>	<b>0.14</b>	<b>0.01</b>	<b>0.15</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>		<b>91.38</b>		<b>0.00</b>		<b>91.49</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					0.08	0.00	0.08	0.00	0.00	0.00						0.00
Off-Road	0.42	2.73	2.11	0.00		0.23	0.23		0.23	0.23	0.00	309.80		0.04		310.58

<b>Total</b>	<b>0.42</b>	<b>2.73</b>	<b>2.11</b>	<b>0.00</b>	<b>0.08</b>	<b>0.23</b>	<b>0.31</b>	<b>0.00</b>	<b>0.23</b>	<b>0.23</b>	<b>0.00</b>	<b>309.80</b>		<b>0.04</b>		<b>310.58</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	0.05	0.39	0.34	0.00	0.10	0.01	0.11	0.00	0.01	0.01		61.45		0.00		61.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		29.93		0.00		29.99
<b>Total</b>	<b>0.08</b>	<b>0.42</b>	<b>0.64</b>	<b>0.00</b>	<b>0.14</b>	<b>0.01</b>	<b>0.15</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>		<b>91.38</b>		<b>0.00</b>		<b>91.49</b>

**3.3 Site Preparation - 2013**

**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					0.05	0.00	0.05	0.00	0.00	0.00						0.00
Off-Road	0.55	3.65	2.82	0.00		0.31	0.31		0.31	0.31		413.07		0.05		414.11
<b>Total</b>	<b>0.55</b>	<b>3.65</b>	<b>2.82</b>	<b>0.00</b>	<b>0.05</b>	<b>0.31</b>	<b>0.36</b>	<b>0.00</b>	<b>0.31</b>	<b>0.31</b>		<b>413.07</b>		<b>0.05</b>		<b>414.11</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		29.93		0.00		29.99

<b>Total</b>	<b>0.03</b>	<b>0.03</b>	<b>0.30</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>29.93</b>		<b>0.00</b>		<b>29.99</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					0.02	0.00	0.02	0.00	0.00	0.00						0.00
Off-Road	0.55	3.65	2.82	0.00		0.31	0.31		0.31	0.31	0.00	413.07		0.05		414.11
<b>Total</b>	<b>0.55</b>	<b>3.65</b>	<b>2.82</b>	<b>0.00</b>	<b>0.02</b>	<b>0.31</b>	<b>0.33</b>	<b>0.00</b>	<b>0.31</b>	<b>0.31</b>	<b>0.00</b>	<b>413.07</b>		<b>0.05</b>		<b>414.11</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		29.93		0.00		29.99
<b>Total</b>	<b>0.03</b>	<b>0.03</b>	<b>0.30</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>29.93</b>		<b>0.00</b>		<b>29.99</b>

**3.4 Grading - 2013**

**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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.42	2.73	2.11	0.00		0.23	0.23		0.23	0.23		309.80		0.04		310.58
<b>Total</b>	<b>0.42</b>	<b>2.73</b>	<b>2.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.23</b>	<b>0.23</b>	<b>0.00</b>	<b>0.23</b>	<b>0.23</b>		<b>309.80</b>		<b>0.04</b>		<b>310.58</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		29.93		0.00		29.99
<b>Total</b>	<b>0.03</b>	<b>0.03</b>	<b>0.30</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>29.93</b>		<b>0.00</b>		<b>29.99</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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.42	2.73	2.11	0.00		0.23	0.23		0.23	0.23	0.00	309.80		0.04		310.58
<b>Total</b>	<b>0.42</b>	<b>2.73</b>	<b>2.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.23</b>	<b>0.23</b>	<b>0.00</b>	<b>0.23</b>	<b>0.23</b>	<b>0.00</b>	<b>309.80</b>		<b>0.04</b>		<b>310.58</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		29.93		0.00		29.99
<b>Total</b>	<b>0.03</b>	<b>0.03</b>	<b>0.30</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>29.93</b>		<b>0.00</b>		<b>29.99</b>

**3.5 Building Construction - 2013**

**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	0.55	3.65	2.82	0.00		0.31	0.31		0.31	0.31		413.07		0.05		414.11
<b>Total</b>	<b>0.55</b>	<b>3.65</b>	<b>2.82</b>	<b>0.00</b>		<b>0.31</b>	<b>0.31</b>		<b>0.31</b>	<b>0.31</b>		<b>413.07</b>		<b>0.05</b>		<b>414.11</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.02	0.15	0.15	0.00	0.01	0.00	0.01	0.00	0.00	0.01		25.40		0.00		25.42
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		29.93		0.00		29.99
<b>Total</b>	<b>0.05</b>	<b>0.18</b>	<b>0.45</b>	<b>0.00</b>	<b>0.05</b>	<b>0.00</b>	<b>0.05</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>		<b>55.33</b>		<b>0.00</b>		<b>55.41</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	0.55	3.65	2.82	0.00		0.31	0.31		0.31	0.31	0.00	413.07		0.05		414.11
<b>Total</b>	<b>0.55</b>	<b>3.65</b>	<b>2.82</b>	<b>0.00</b>		<b>0.31</b>	<b>0.31</b>		<b>0.31</b>	<b>0.31</b>	<b>0.00</b>	<b>413.07</b>		<b>0.05</b>		<b>414.11</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.02	0.15	0.15	0.00	0.01	0.00	0.01	0.00	0.00	0.01		25.40		0.00		25.42
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		29.93		0.00		29.99

Total	0.05	0.18	0.45	0.00	0.05	0.00	0.05	0.00	0.00	0.01		55.33		0.00		55.41
-------	------	------	------	------	------	------	------	------	------	------	--	-------	--	------	--	-------

### 3.6 Architectural Coating - 2013

#### 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	5.09					0.00	0.00		0.00	0.00						0.00
Off-Road	0.49	2.96	1.94	0.00		0.27	0.27		0.27	0.27		281.19		0.04		282.10
<b>Total</b>	<b>5.58</b>	<b>2.96</b>	<b>1.94</b>	<b>0.00</b>		<b>0.27</b>	<b>0.27</b>		<b>0.27</b>	<b>0.27</b>		<b>281.19</b>		<b>0.04</b>		<b>282.10</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.02	0.02	0.20	0.00	0.03	0.00	0.03	0.00	0.00	0.00		19.96		0.00		19.99
<b>Total</b>	<b>0.02</b>	<b>0.02</b>	<b>0.20</b>	<b>0.00</b>	<b>0.03</b>	<b>0.00</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>19.96</b>		<b>0.00</b>		<b>19.99</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	5.09					0.00	0.00		0.00	0.00						0.00
Off-Road	0.49	2.96	1.94	0.00		0.27	0.27		0.27	0.27	0.00	281.19		0.04		282.10
<b>Total</b>	<b>5.58</b>	<b>2.96</b>	<b>1.94</b>	<b>0.00</b>		<b>0.27</b>	<b>0.27</b>		<b>0.27</b>	<b>0.27</b>	<b>0.00</b>	<b>281.19</b>		<b>0.04</b>		<b>282.10</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.02	0.02	0.20	0.00	0.03	0.00	0.03	0.00	0.00	0.00		19.96		0.00		19.99
<b>Total</b>	<b>0.02</b>	<b>0.02</b>	<b>0.20</b>	<b>0.00</b>	<b>0.03</b>	<b>0.00</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>19.96</b>		<b>0.00</b>		<b>19.99</b>

### 3.7 Trenching - 2013

#### 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	1.20	9.25	7.79	0.01		0.67	0.67		0.67	0.67		1,221.72		0.11		1,223.96
<b>Total</b>	<b>1.20</b>	<b>9.25</b>	<b>7.79</b>	<b>0.01</b>		<b>0.67</b>	<b>0.67</b>		<b>0.67</b>	<b>0.67</b>		<b>1,221.72</b>		<b>0.11</b>		<b>1,223.96</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.08	0.81	0.00	0.10	0.00	0.11	0.00	0.00	0.01		79.82		0.01		79.97
<b>Total</b>	<b>0.08</b>	<b>0.08</b>	<b>0.81</b>	<b>0.00</b>	<b>0.10</b>	<b>0.00</b>	<b>0.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>		<b>79.82</b>		<b>0.01</b>		<b>79.97</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	1.20	9.25	7.79	0.01		0.67	0.67		0.67	0.67	0.00	1,221.72		0.11		1,223.96
<b>Total</b>	<b>1.20</b>	<b>9.25</b>	<b>7.79</b>	<b>0.01</b>		<b>0.67</b>	<b>0.67</b>		<b>0.67</b>	<b>0.67</b>	<b>0.00</b>	<b>1,221.72</b>		<b>0.11</b>		<b>1,223.96</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.08	0.81	0.00	0.10	0.00	0.11	0.00	0.00	0.01		79.82		0.01		79.97
<b>Total</b>	<b>0.08</b>	<b>0.08</b>	<b>0.81</b>	<b>0.00</b>	<b>0.10</b>	<b>0.00</b>	<b>0.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>		<b>79.82</b>		<b>0.01</b>		<b>79.97</b>

**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	1.45	9.03	6.00	0.01		0.78	0.78		0.78	0.78		844.93		0.13		847.66
Paving	0.03					0.00	0.00		0.00	0.00						0.00
<b>Total</b>	<b>1.48</b>	<b>9.03</b>	<b>6.00</b>	<b>0.01</b>		<b>0.78</b>	<b>0.78</b>		<b>0.78</b>	<b>0.78</b>		<b>844.93</b>		<b>0.13</b>		<b>847.66</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.05	0.05	0.51	0.00	0.07	0.00	0.07	0.00	0.00	0.00	0.00	49.89	0.00	0.00	0.00	49.98
<b>Total</b>	<b>0.05</b>	<b>0.05</b>	<b>0.51</b>	<b>0.00</b>	<b>0.07</b>	<b>0.00</b>	<b>0.07</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>49.89</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>49.98</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	1.45	9.03	6.00	0.01		0.78	0.78		0.78	0.78	0.00	844.93		0.13		847.66
Paving	0.03					0.00	0.00		0.00	0.00						0.00
<b>Total</b>	<b>1.48</b>	<b>9.03</b>	<b>6.00</b>	<b>0.01</b>		<b>0.78</b>	<b>0.78</b>		<b>0.78</b>	<b>0.78</b>	<b>0.00</b>	<b>844.93</b>		<b>0.13</b>		<b>847.66</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.05	0.05	0.51	0.00	0.07	0.00	0.07	0.00	0.00	0.00		49.89		0.00		49.98
<b>Total</b>	<b>0.05</b>	<b>0.05</b>	<b>0.51</b>	<b>0.00</b>	<b>0.07</b>	<b>0.00</b>	<b>0.07</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>49.89</b>		<b>0.00</b>		<b>49.98</b>

**TII Phase A**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric
University/College (4Yr)	0	Employee
Other Asphalt Surfaces	0.16	Acre
Other Non-Asphalt Surfaces	0.04	Acre

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>		<b>Utility Company</b>	Pacific Gas & Electric Company
<b>Climate Zone</b>	4		2.2		
		<b>Precipitation Freq (Days)</b>	61		

**1.3 User Entered Comments**

Project Characteristics -

Land Use - "Educational": South Core building site. "Parking/Other Asphalt Surfaces": roads where trenching will occur. "Parking/Other Non-Asphalt Surfaces": directional boring in unpaved areas.

Construction Phase - Construction phase lengths from project manager.

Off-road Equipment -

Off-road Equipment - Construction of one-story wood building will require minimal heavy equipment

Off-road Equipment - Buildings to be demolished are small wooden sheds, and site will not accommodate additional large equipment.

Off-road Equipment - Only minor grading required.

Off-road Equipment - All paving will be asphalt. Roller not required for paving trench.

Off-road Equipment - No room for grader; very little grading is needed. Grading will be done by hand.

Off-road Equipment - Trenching in paved roads requires saw and backhoe. Directional boring requires drill rig. Both types of work would proceed at same

Trips and VMT - Worker trips added for Bldg Const and Arch Coating (default estimated 0). 1 vendor trip per day added for building construction.

On-road Fugitive Dust - Directional boring equipment will be hauled partly on unpaved fire road.

Demolition -

Grading - Site preparation only required for South Core building.

Construction Off-road Equipment Mitigation -

## 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					
2013	5.60	9.34	8.58	0.01	0.30	0.78	0.84	0.00	0.78	0.78	0.00	1,294.98	0.00	0.13	0.00	1,297.80
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

#### 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					
2013	5.60	9.34	8.58	0.01	0.21	0.78	0.84	0.00	0.78	0.78	0.00	1,294.98	0.00	0.13	0.00	1,297.80
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

## 3.0 Construction Detail

### 3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

### 3.2 Demolition - 2013

**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					0.17	0.00	0.17	0.00	0.00	0.00						0.00
Off-Road	0.42	2.73	2.11	0.00		0.23	0.23		0.23	0.23		309.80		0.04		310.58
<b>Total</b>	<b>0.42</b>	<b>2.73</b>	<b>2.11</b>	<b>0.00</b>	<b>0.17</b>	<b>0.23</b>	<b>0.40</b>	<b>0.00</b>	<b>0.23</b>	<b>0.23</b>		<b>309.80</b>		<b>0.04</b>		<b>310.58</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	0.05	0.40	0.38	0.00	0.10	0.01	0.11	0.00	0.01	0.01		61.32		0.00		61.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		27.47		0.00		27.53
<b>Total</b>	<b>0.08</b>	<b>0.43</b>	<b>0.68</b>	<b>0.00</b>	<b>0.14</b>	<b>0.01</b>	<b>0.15</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>		<b>88.79</b>		<b>0.00</b>		<b>88.90</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					0.08	0.00	0.08	0.00	0.00	0.00						0.00
Off-Road	0.42	2.73	2.11	0.00		0.23	0.23		0.23	0.23	0.00	309.80		0.04		310.58
<b>Total</b>	<b>0.42</b>	<b>2.73</b>	<b>2.11</b>	<b>0.00</b>	<b>0.08</b>	<b>0.23</b>	<b>0.31</b>	<b>0.00</b>	<b>0.23</b>	<b>0.23</b>	<b>0.00</b>	<b>309.80</b>		<b>0.04</b>		<b>310.58</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	0.05	0.40	0.38	0.00	0.10	0.01	0.11	0.00	0.01	0.01		61.32		0.00		61.37



Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	27.47	0.00			27.53
<b>Total</b>	<b>0.08</b>	<b>0.43</b>	<b>0.68</b>	<b>0.00</b>	<b>0.14</b>	<b>0.01</b>	<b>0.15</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>		<b>88.79</b>		<b>0.00</b>		<b>88.90</b>

### 3.3 Site Preparation - 2013

#### 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					0.05	0.00	0.05	0.00	0.00	0.00						0.00
Off-Road	0.55	3.65	2.82	0.00		0.31	0.31		0.31	0.31		413.07		0.05		414.11
<b>Total</b>	<b>0.55</b>	<b>3.65</b>	<b>2.82</b>	<b>0.00</b>	<b>0.05</b>	<b>0.31</b>	<b>0.36</b>	<b>0.00</b>	<b>0.31</b>	<b>0.31</b>		<b>413.07</b>		<b>0.05</b>		<b>414.11</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		27.47		0.00		27.53
<b>Total</b>	<b>0.03</b>	<b>0.03</b>	<b>0.30</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>27.47</b>		<b>0.00</b>		<b>27.53</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					0.02	0.00	0.02	0.00	0.00	0.00						0.00
Off-Road	0.55	3.65	2.82	0.00		0.31	0.31		0.31	0.31	0.00	413.07		0.05		414.11
<b>Total</b>	<b>0.55</b>	<b>3.65</b>	<b>2.82</b>	<b>0.00</b>	<b>0.02</b>	<b>0.31</b>	<b>0.33</b>	<b>0.00</b>	<b>0.31</b>	<b>0.31</b>	<b>0.00</b>	<b>413.07</b>		<b>0.05</b>		<b>414.11</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		27.47		0.00		27.53
<b>Total</b>	<b>0.03</b>	<b>0.03</b>	<b>0.30</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>27.47</b>		<b>0.00</b>		<b>27.53</b>

**3.4 Grading - 2013**

**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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.42	2.73	2.11	0.00		0.23	0.23		0.23	0.23		309.80		0.04		310.58
<b>Total</b>	<b>0.42</b>	<b>2.73</b>	<b>2.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.23</b>	<b>0.23</b>	<b>0.00</b>	<b>0.23</b>	<b>0.23</b>		<b>309.80</b>		<b>0.04</b>		<b>310.58</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		27.47		0.00		27.53
<b>Total</b>	<b>0.03</b>	<b>0.03</b>	<b>0.30</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>27.47</b>		<b>0.00</b>		<b>27.53</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					0.00	0.00	0.00	0.00	0.00	0.00							0.00
Off-Road	0.42	2.73	2.11	0.00		0.23	0.23		0.23	0.23	0.00	309.80		0.04			310.58
<b>Total</b>	<b>0.42</b>	<b>2.73</b>	<b>2.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.23</b>	<b>0.23</b>	<b>0.00</b>	<b>0.23</b>	<b>0.23</b>	<b>0.00</b>	<b>309.80</b>		<b>0.04</b>			<b>310.58</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00			0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00			0.00
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		27.47		0.00			27.53
<b>Total</b>	<b>0.03</b>	<b>0.03</b>	<b>0.30</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>27.47</b>		<b>0.00</b>			<b>27.53</b>

**3.5 Building Construction - 2013**

**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	0.55	3.65	2.82	0.00		0.31	0.31		0.31	0.31		413.07		0.05			414.11
<b>Total</b>	<b>0.55</b>	<b>3.65</b>	<b>2.82</b>	<b>0.00</b>		<b>0.31</b>	<b>0.31</b>		<b>0.31</b>	<b>0.31</b>		<b>413.07</b>		<b>0.05</b>			<b>414.11</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.02	0.15	0.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01		25.32		0.00		25.34
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		27.47		0.00		27.53
<b>Total</b>	<b>0.05</b>	<b>0.18</b>	<b>0.48</b>	<b>0.00</b>	<b>0.05</b>	<b>0.00</b>	<b>0.05</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>		<b>52.79</b>		<b>0.00</b>		<b>52.87</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	0.55	3.65	2.82	0.00		0.31	0.31		0.31	0.31	0.00	413.07		0.05		414.11
<b>Total</b>	<b>0.55</b>	<b>3.65</b>	<b>2.82</b>	<b>0.00</b>		<b>0.31</b>	<b>0.31</b>		<b>0.31</b>	<b>0.31</b>	<b>0.00</b>	<b>413.07</b>		<b>0.05</b>		<b>414.11</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.02	0.15	0.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01		25.32		0.00		25.34
Worker	0.03	0.03	0.30	0.00	0.04	0.00	0.04	0.00	0.00	0.00		27.47		0.00		27.53
<b>Total</b>	<b>0.05</b>	<b>0.18</b>	<b>0.48</b>	<b>0.00</b>	<b>0.05</b>	<b>0.00</b>	<b>0.05</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>		<b>52.79</b>		<b>0.00</b>		<b>52.87</b>

**3.6 Architectural Coating - 2013**

**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	5.09					0.00	0.00		0.00	0.00						0.00
Off-Road	0.49	2.96	1.94	0.00		0.27	0.27		0.27	0.27		281.19		0.04		282.10
<b>Total</b>	<b>5.58</b>	<b>2.96</b>	<b>1.94</b>	<b>0.00</b>		<b>0.27</b>	<b>0.27</b>		<b>0.27</b>	<b>0.27</b>		<b>281.19</b>		<b>0.04</b>		<b>282.10</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.02	0.02	0.20	0.00	0.03	0.00	0.03	0.00	0.00	0.00		18.31		0.00		18.35
<b>Total</b>	<b>0.02</b>	<b>0.02</b>	<b>0.20</b>	<b>0.00</b>	<b>0.03</b>	<b>0.00</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>18.31</b>		<b>0.00</b>		<b>18.35</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	5.09					0.00	0.00		0.00	0.00						0.00
Off-Road	0.49	2.96	1.94	0.00		0.27	0.27		0.27	0.27	0.00	281.19		0.04		282.10
<b>Total</b>	<b>5.58</b>	<b>2.96</b>	<b>1.94</b>	<b>0.00</b>		<b>0.27</b>	<b>0.27</b>		<b>0.27</b>	<b>0.27</b>	<b>0.00</b>	<b>281.19</b>		<b>0.04</b>		<b>282.10</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.20	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	18.31	0.00	0.00	0.00	18.35
<b>Total</b>	<b>0.02</b>	<b>0.02</b>	<b>0.20</b>	<b>0.00</b>	<b>0.03</b>	<b>0.00</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>18.31</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>18.35</b>

### 3.7 Trenching - 2013

#### 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	1.20	9.25	7.79	0.01		0.67	0.67		0.67	0.67		1,221.72		0.11		1,223.96
<b>Total</b>	<b>1.20</b>	<b>9.25</b>	<b>7.79</b>	<b>0.01</b>		<b>0.67</b>	<b>0.67</b>		<b>0.67</b>	<b>0.67</b>		<b>1,221.72</b>		<b>0.11</b>		<b>1,223.96</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.09	0.79	0.00	0.10	0.00	0.11	0.00	0.00	0.01		73.26		0.01		73.40
<b>Total</b>	<b>0.09</b>	<b>0.09</b>	<b>0.79</b>	<b>0.00</b>	<b>0.10</b>	<b>0.00</b>	<b>0.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>		<b>73.26</b>		<b>0.01</b>		<b>73.40</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	1.20	9.25	7.79	0.01		0.67	0.67		0.67	0.67	0.00	1,221.72		0.11		1,223.96

<b>Total</b>	<b>1.20</b>	<b>9.25</b>	<b>7.79</b>	<b>0.01</b>		<b>0.67</b>	<b>0.67</b>		<b>0.67</b>	<b>0.67</b>	<b>0.00</b>	<b>1,221.72</b>		<b>0.11</b>		<b>1,223.96</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.09	0.79	0.00	0.10	0.00	0.11	0.00	0.00	0.01		73.26		0.01		73.40
<b>Total</b>	<b>0.09</b>	<b>0.09</b>	<b>0.79</b>	<b>0.00</b>	<b>0.10</b>	<b>0.00</b>	<b>0.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>		<b>73.26</b>		<b>0.01</b>		<b>73.40</b>

**3.8 Paving - 2013**

**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	1.45	9.03	6.00	0.01		0.78	0.78		0.78	0.78		844.93		0.13		847.66
Paving	0.03					0.00	0.00		0.00	0.00						0.00
<b>Total</b>	<b>1.48</b>	<b>9.03</b>	<b>6.00</b>	<b>0.01</b>		<b>0.78</b>	<b>0.78</b>		<b>0.78</b>	<b>0.78</b>		<b>844.93</b>		<b>0.13</b>		<b>847.66</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.06	0.49	0.00	0.07	0.00	0.07	0.00	0.00	0.00		45.79		0.00		45.88

<b>Total</b>	<b>0.06</b>	<b>0.06</b>	<b>0.49</b>	<b>0.00</b>	<b>0.07</b>	<b>0.00</b>	<b>0.07</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>45.79</b>		<b>0.00</b>		<b>45.88</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	1.45	9.03	6.00	0.01		0.78	0.78		0.78	0.78	0.00	844.93		0.13		847.66
Paving	0.03					0.00	0.00		0.00	0.00						0.00
<b>Total</b>	<b>1.48</b>	<b>9.03</b>	<b>6.00</b>	<b>0.01</b>		<b>0.78</b>	<b>0.78</b>		<b>0.78</b>	<b>0.78</b>	<b>0.00</b>	<b>844.93</b>		<b>0.13</b>		<b>847.66</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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.06	0.49	0.00	0.07	0.00	0.07	0.00	0.00	0.00		45.79		0.00		45.88
<b>Total</b>	<b>0.06</b>	<b>0.06</b>	<b>0.49</b>	<b>0.00</b>	<b>0.07</b>	<b>0.00</b>	<b>0.07</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>45.79</b>		<b>0.00</b>		<b>45.88</b>



## **Appendix E**

### **Responses to Comments on the Draft Initial Study/ Mitigated Negative Declaration**



EDMUND G. BROWN JR.  
GOVERNOR

STATE OF CALIFORNIA  
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH  
STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX  
DIRECTOR

November 2, 2012

Alisa Klaus  
University of California Santa Cruz  
PP and C  
1156 High Street  
Santa Cruz, CA 95064

Subject: Telecommunications Infrastructure Improvements Phase A  
SCH#: 2012102010

Dear Alisa Klaus:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. The review period closed on November 1, 2012, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Morgan".

Scott Morgan  
Director, State Clearinghouse

**Document Details Report  
State Clearinghouse Data Base**

**SCH#** 2012102010  
**Project Title** Telecommunications Infrastructure Improvements Phase A  
**Lead Agency** University of California, Santa Cruz

---

**Type** **MND** Mitigated Negative Declaration  
**Description** The project consists of upgrades to the interior telecommunications infrastructure in existing buildings, installation of new telecommunications conduit, fiber, and vaults between various locations on the campus, and construction of a new, 1,100-sf telecommunications equipment building in the Campus Facilities area near the southern end of the campus.

---

**Lead Agency Contact**

**Name** Alisa Klaus  
**Agency** University of California Santa Cruz  
**Phone** 831 459 3732 **Fax**  
**email**  
**Address** PP and C  
1156 High Street  
**City** Santa Cruz **State** CA **Zip** 95064

---

**Project Location**

**County** Santa Cruz  
**City** Santa Cruz  
**Region**  
**Lat / Long** 36° 59' 59.9" N / 122° 3' 11.8" W  
**Cross Streets** High Street/Bay Drive  
**Parcel No.** 001-011-13  
**Township** 11S **Range** 2W **Section** **Base** MDB&M

---

**Proximity to:**

**Highways** Hwy 1, 17, 9  
**Airports**  
**Railways**  
**Waterways** Moore Creek, Jordan Gulch, San Lorenzo River  
**Schools** Westlake ES  
**Land Use** Campus Support (under UC Santa Cruz 2005 Long Range Development Plan)

---

**Project Issues** Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Landuse; Cumulative Effects; Other Issues

---

**Reviewing Agencies** Resources Agency; Department of Fish and Game, Region 3; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 5; Regional Water Quality Control Board, Region 3; Department of Toxic Substances Control; Native American Heritage Commission; Public Utilities Commission

---

**Date Received** 10/03/2012 **Start of Review** 10/03/2012 **End of Review** 11/01/2012

REC'D NOV 13 2012



EDMUND G. BROWN JR.  
GOVERNOR

STATE OF CALIFORNIA  
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH  
STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX  
DIRECTOR

November 5, 2012

Alisa Klaus  
University of California Santa Cruz  
PP and C  
1156 High Street  
Santa Cruz, CA 95064

Subject: Telecommunications Infrastructure Improvements Phase A  
SCH#: 2012102010

Dear Alisa Klaus:

The enclosed comment (s) on your Mitigated Negative Declaration was (were) received by the State Clearinghouse after the end of the state review period, which closed on November 1, 2012. We are forwarding these comments to you because they provide information or raise issues that should be addressed in your final environmental document.

The California Environmental Quality Act does not require Lead Agencies to respond to late comments. However, we encourage you to incorporate these additional comments into your final environmental document and to consider them prior to taking final action on the proposed project.

Please contact the State Clearinghouse at (916) 445-0613 if you have any questions concerning the environmental review process. If you have a question regarding the above-named project, please refer to the ten-digit State Clearinghouse number (2012102010) when contacting this office.

Sincerely,

A handwritten signature in black ink that reads "Scott Morgan".

Scott Morgan  
Director, State Clearinghouse

Enclosures  
cc: Resources Agency



State of California – The Natural Resources Agency  
 DEPARTMENT OF FISH AND GAME  
 Bay Delta Region  
 7329 Silverado Trail  
 Napa, CA 94558  
 (707) 944-5500  
[www.dfg.ca.gov](http://www.dfg.ca.gov)

EDMUND G. BROWN JR., Governor  
 CHARLTON H. BONHAM, Director



RECEIVED

November 1, 2012

NOV 05 2012

STATE CLEARING HOUSE

Ms. Alisa Klaus  
 University of California at Santa Cruz  
 1156 High Street  
 Santa Cruz, CA 95064

*clean  
11/01/12  
late*

Dear Ms. Klaus:

Subject: Telecommunications Infrastructure Improvements Phase A, Mitigated Negative Declaration, SCH# 2012102010, City and County Of Santa Cruz

The University of California at Santa Cruz proposes to perform upgrades to existing interior telecommunications infrastructures in 25 buildings in the central and western portions of the campus; construct a new, redundant Minimum Point of Entry in the south part of the campus housed in a new, 860-square-foot building in the Campus Facilities area in the southern campus; perform upgrades to fiber optic and copper cable in existing conduit in between buildings in various locations on the campus; installation of cable in new conduit; and construction of telecommunications vaults along the new conduit. The project would install a total of approximately 10,600 linear feet (lf) of new conduit. The new conduit would be installed primarily beneath existing paved and dirt roads, but some would be installed in grassland in the lower campus and the meadow north of the Arboretum.

Species indicated with the Initial Study that may be impacted by the project include: San Francisco popcorn flower, a species listed under the California Endangered Species Act (CESA); Ohlone tiger beetle, and California red-legged frog, a species protected under the federal Endangered Species Act and listed as California Species of Special Concern; western burrowing owls and western pond turtles, both listed as California Species of Special Concern.

As Trustee for the state's fish and wildlife resources, the Department of Fish and Game (DFG) has jurisdiction over the conservation, protection, and management of the fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species for the benefit and use by the people of California. In this capacity, DFG administers CESA, the Lake and Streambed Alteration Program, the Native Plant Protection Act, and other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife public trust resources. Pursuant to our jurisdiction, DFG submits the following comments and recommendations regarding the project.

There is insufficient information within the Initial Study to determine whether state listed or rare plant species are present within the construction footprint, to what extent the project may impact their habitats or whether take of these species may occur. Focused surveys for rare plant species known to occur in the area (e.g. white-rayed pentachaeta) and any subsequently warranted impacts analyses should be performed before a Mitigated Negative Declaration is adopted.

Ms. Alisa Klaus  
November 1, 2012  
Page 2

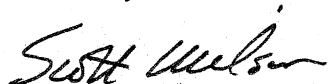
In the absence of additional information, DFG recommends moving the portion of the new conduit (bore holes 10, 9, 8, 4, and 5; Figure 6.4-1) out of the grassland, meadow and riparian areas. The conduit should be installed in extant disturbed areas adjacent to the paved Empire Grade roadway. This avoidance measure should result in reducing the majority of potential impacts to sensitive species and habitat.

Please be advised that a CESA Permit must be obtained if the project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the project. Issuance of a CESA Permit is subject to California Environmental Quality Act (CEQA) documentation; therefore, the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the project will impact CESA listed species, early consultation is encouraged, as significant modification to the project and mitigation measures may be required in order to obtain a CESA Permit.

The project proposes to install underground conduit that will be located adjacent to Moore Creek and includes at least one crossing over the creek. For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, or deposit or dispose of debris, waste, or material containing crumbled, flaked or ground pavement where it may pass into any river, stream or lake, DFG may require a Lake and Streambed Alteration Agreement (LSAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. Issuance of an LSAA is subject to CEQA. DFG, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. To obtain information about the LSAA notification process, please access our website at <http://www.dfg.ca.gov/habcon/1600/>; or to request a notification package, contact the Lake and Streambed Alteration Program at (707) 944-5520.

If you have any questions, please contact Ms. Melissa Farinha, Environmental Scientist, at [mfarinha@dfg.ca.gov](mailto:mfarinha@dfg.ca.gov) or (707) 944-5579; or Mr. Craig Weightman, Acting Environmental Program Manager, at [cweightman@dfg.ca.gov](mailto:cweightman@dfg.ca.gov) or (707) 944-5577.

Sincerely,



Scott Wilson  
Acting Regional Manager  
Bay Delta Region

cc: State Clearinghouse



**MBUAPCD**

Monterey Bay Unified Air Pollution Control District  
Serving Monterey, San Benito, and Santa Cruz Counties

24580 Silver Cloud Court  
Monterey, CA 93940  
PHONE: (831) 647-9411 • FAX: (831) 647-8501

November 2, 2012

Alisa Klaus, Senior Environmental Planner  
Office of Physical Planning & Construction  
University of California Santa Cruz  
1156 High Street, Barn G  
Santa Cruz, CA 95064

SUBJECT: UCSC Telecommunications Infrastructure Upgrade, Draft Initial Study/Mitigated  
Negative Declaration

Dear Ms. Klaus:

Thank you for providing the Monterey Bay Unified Air Pollution Control District (Air District) the opportunity to comment on the above-referenced document. The Air District has reviewed the document and has no comments.

Best regards,

Amy Clymo  
Supervising Air Quality Planner  
(831) 647-9418 ext. 227 or [aclymo@mbuapcd.org](mailto:aclymo@mbuapcd.org)

cc: David Craft, MBUPCD Air Quality Engineer/Planner



State of California – The Natural Resources Agency  
 DEPARTMENT OF FISH AND GAME  
 Bay Delta Region  
 7329 Silverado Trail  
 Napa, CA 94558  
 (707) 944-5500  
[www.dfg.ca.gov](http://www.dfg.ca.gov)

EDMUND G. BROWN JR., Governor  
 CHARLTON H. BONHAM, Director



## Comment Letter SA-1

November 1, 2012

Ms. Alisa Klaus  
 University of California at Santa Cruz  
 1156 High Street  
 Santa Cruz, CA 95064

Dear Ms. Klaus:

Subject: Telecommunications Infrastructure Improvements Phase A, Mitigated Negative Declaration, SCH# 2012102010, City and County Of Santa Cruz

The University of California at Santa Cruz proposes to perform upgrades to existing interior telecommunications infrastructures in 25 buildings in the central and western portions of the campus; construct a new, redundant Minimum Point of Entry in the south part of the campus housed in a new, 860-square-foot building in the Campus Facilities area in the southern campus; perform upgrades to fiber optic and copper cable in existing conduit in between buildings in various locations on the campus; installation of cable in new conduit; and construction of telecommunications vaults along the new conduit. The project would install a total of approximately 10,600 linear feet (lf) of new conduit. The new conduit would be installed primarily beneath existing paved and dirt roads, but some would be installed in grassland in the lower campus and the meadow north of the Arboretum.

Species indicated with the Initial Study that may be impacted by the project include: San Francisco popcorn flower, a species listed under the California Endangered Species Act (CESA); Ohlone tiger beetle, and California red-legged frog, a species protected under the federal Endangered Species Act and listed as California Species of Special Concern; western burrowing owls and western pond turtles, both listed as California Species of Special Concern.

As Trustee for the state’s fish and wildlife resources, the Department of Fish and Game (DFG) has jurisdiction over the conservation, protection, and management of the fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species for the benefit and use by the people of California. In this capacity, DFG administers CESA, the Lake and Streambed Alteration Program, the Native Plant Protection Act, and other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife public trust resources. Pursuant to our jurisdiction, DFG submits the following comments and recommendations regarding the project.

There is insufficient information within the Initial Study to determine whether state listed or rare plant species are present within the construction footprint, to what extent the project may impact their habitats or whether take of these species may occur. Focused surveys for rare plant species known to occur in the area (e.g. white-rayed pentachaeta) and any subsequently warranted impacts analyses should be performed before a Mitigated Negative Declaration is adopted.

**SA-1-1**



## Comment Letter SA-1, cont.

Ms. Alisa Klaus  
November 1, 2012  
Page 2

In the absence of additional information, DFG recommends moving the portion of the new conduit (bore holes 10, 9, 8, 4, and 5; Figure 6.4-1) out of the grassland, meadow and riparian areas. The conduit should be installed in extant disturbed areas adjacent to the paved Empire Grade roadway. This avoidance measure should result in reducing the majority of potential impacts to sensitive species and habitat.

**SA-1-2**

Please be advised that a CESA Permit must be obtained if the project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the project. Issuance of a CESA Permit is subject to California Environmental Quality Act (CEQA) documentation; therefore, the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the project will impact CESA listed species, early consultation is encouraged, as significant modification to the project and mitigation measures may be required in order to obtain a CESA Permit.

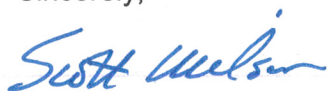
**SA-1-3**

The project proposes to install underground conduit that will be located adjacent to Moore Creek and includes at least one crossing over the creek. For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, or deposit or dispose of debris, waste, or material containing crumbled, flaked or ground pavement where it may pass into any river, stream or lake, DFG may require a Lake and Streambed Alteration Agreement (LSAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. Issuance of an LSAA is subject to CEQA. DFG, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. To obtain information about the LSAA notification process, please access our website at <http://www.dfg.ca.gov/habcon/1600/>; or to request a notification package, contact the Lake and Streambed Alteration Program at (707) 944-5520.

**SA-1-4**

If you have any questions, please contact Ms. Melissa Farinha, Environmental Scientist, at [mfarinha@dfg.ca.gov](mailto:mfarinha@dfg.ca.gov) or (707) 944-5579; or Mr. Craig Weightman, Acting Environmental Program Manager, at [cweightman@dfg.ca.gov](mailto:cweightman@dfg.ca.gov) or (707) 944-5577.

Sincerely,



Scott Wilson  
Acting Regional Manager  
Bay Delta Region

cc: State Clearinghouse

**Response to Comment SA-1-1:** As discussed in the Draft Initial Study (p. 24), there are no documented occurrences of special-status plant species on the study area, and no special-status plants have been identified on or adjacent to the study area during previous studies. These previous studies include the biological baseline study of the lower, central and upper UC Santa Cruz campus, including the project area, that was prepared as background for the UC Santa Cruz 2005 LRDP EIR.<sup>1</sup> Furthermore, according to the biological resources assessment for the project (Biosearch Associates 2012), thirty-seven special-status plant species identified during the background literature search are unlikely to occur on the study area because: (1) the study area lacks suitable habitat components (e.g., plant community, substrate, and/or microhabitat); (2) the study area is heavily disturbed by development and human use; (3) a species should have been identifiable (e.g., shrubs or trees) during the field visit and was not observed; and/or (4) a species is considered absent from the UCSC campus. While marginal habitat for *Pentachaeta bellidiflora* (white-rayed pentachaeta) is present, suitable substrate is lacking and species not expected to occur on study area (Biosearch Associates 2012). Although three special-status plants could potentially occur in Non-native Grassland in the study area [bent-flowered fiddleneck (*Amsinckia lunaris*), marsh microseris (*Microseris paludosa*), and San Francisco popcorn flower (*Plagiobothrys diffusus*)], the likelihood that these plants are present on the site is low. Furthermore, in the areas where suitable habitat for marsh microseris and San Francisco popcorn flower primarily occurs (near locations 9 and 10 on Figure 6.4-1 of the Draft Initial Study), ground disturbance would be limited to an existing fire road. If any of these species are observed during the focused surveys that would be conducted in the spring pursuant to TII Phase A Mitigation BIO-1, the bore pit or trench alignment can be adjusted in the field to avoid any disturbance to these plants. The text of the mitigation measure has been revised as shown below to clarify that, if special-status plants are found in the vicinity of any of the proposed work areas, the bore pit location or trench alignment will be moved to avoid the disturbance. The mitigation provides a performance standard that ensures that the project would not disturb the special-status species that may be present in the project area. This mitigation measure would reduce the impact to a less-than-significant level and additional analysis is not required.

**TII Phase A Mitigation BIO-1.** A qualified botanist shall conduct a focused plant survey for target special-status species within 50 feet of ground disturbance in suitable Non-Native Grassland during the spring blooming period prior to construction. If no special-status species are observed during the focused survey, no additional mitigation is necessary. If special-status plants are observed, the population shall be mapped and quantified and a suitable buffer zone (based on species requirements, proximity to the work area and other site specific factors) established, along with other protection measures, such as fencing installed around the population to protect it from disturbance. Any bore pits or trench that is within the buffer shall be moved to a location outside the buffer.

**Response to Comment SA-1-2:** The commenter recommends moving the new conduit in the vicinity of bore holes 4,5, 8, 9, and 10 to disturbed areas adjacent to the paved Empire Grade roadway. The Campus has considered placing the new conduit adjacent to Empire Grade. However, this is undesirable due to the presence of multiple utility lines in that area. The proposed alignment is substantially shorter. Ground disturbance would be minimized through the use of directional drilling; furthermore, the majority of the bore pits and trenching (including bore holes at locations 4,5 and 8 through 10) would be within existing paths or fire roads. As analyzed in Section 6.4 of the Draft Initial Study, all potentially significant impacts to sensitive species and habitats would be less than significant with implementation of previously adopted LRDP mitigation measures and project-specific mitigation measures identified in the Draft Initial Study.

---

<sup>1</sup> Jones and Stokes. 2004. *Biological Baseline Study of the Lower, Central, and Upper Campus, University of California, Santa Cruz*. August.

**Response to Comment SA-1-3:** The potential impacts of the proposed Project on special-status plants and wildlife species, including those covered by the California Endangered Species Act (CESA), are analyzed on pages 24-30 of the Draft Initial Study. The only species listed as Endangered or Rare under the CESA, with the potential to occur in the Project area, is San Francisco popcornflower (*Plagiobothrys diffusus*), which is listed as Endangered. As explained in the response to comment SA-1-1, above, TII Mitigation Phase A BIO-1, which is identified in the Draft Initial Study, would reduce any potential impacts to this species to a less-than-significant level. The Project would not result in take of this species and a CESA permit will not be required.

**Response to Comment SA-1-4:** The proposed Project would not involve any activities requiring a Lake and Streambed Alteration Permit and would not impact riparian habitat. The proposed bore bit locations in the vicinity of Moore Creek are in an existing dirt road that is well above the top of the bank of the drainage. The stream crossing would be accomplished through directional boring through an existing dam beneath an existing dirt road, with no disturbance of the stream bed or bank or of riparian habitat. In addition, as analyzed on p. 46 of the Draft Initial Study, implementation of TII Phase A Mitigation BIO-2B would ensure that drilling fluid is contained and that any fluid that seeps to the ground surfaces through “frac-outs” is collected and removed from the site. Thus, Project construction would not have a significant adverse effect on water quality or habitat in Moore Creek.