UCDAVIS

EMERSON HALL REPLACEMENT PROJECT

Tiered Initial Study and
Negative Declaration

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

Prepared By:

CAMPUS PLANNING AND ENVIRONMENTAL STEWARDSHIP

University of California
One Shields Avenue
436 Mrak Hall
Davis, California 95616

February 2018

State Clearinghouse # 2018012032

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Campus Planning and Environmental Stewardship
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1 PROJECT INFORMATION

Project title:

Emerson Hall Replacement Project

Project location:

University of California, Davis
Yolo County, California

Lead agency's name and address:

The Regents of the University of California
1111 Franklin Street
Oakland, California 94607

Contact person:

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Project sponsor's name and address:

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University of California
One Shields Avenue
436 Mrak Hall
Davis, California 95616-8678

Location of administrative record:

See lead agency.

Identification of previous documents relied upon for tiering purposes:

This environmental analysis is tiered from the Environmental Impact Report (EIR) for the University of California Davis (UC Davis) 2003 Long Range Development Plan (2003 LRDP). The 2003 LRDP EIR was certified by the UC Regents in November 2003 (State Clearinghouse No. 2002102092). The 2003 LRDP is a comprehensive land use plan that guides physical development on campus to accommodate projected enrollment increases and expanded and new program initiatives. Section 2.2 provides additional information about the tiering process. The 2003 LRDP and its EIR are available for review at the following locations:

- UC Davis Campus Planning and Environmental Stewardship in 436 Mrak Hall on the UC Davis campus

- Reserves at Shields Library on the UC Davis campus
- Yolo County Public Library at 315 East 14th Street in Davis
- Online at: http://sustainability.ucdavis.edu/progress/commitment/environmental_review/index.html

Revisions to the Initial Study and Negative Declaration:

Minor changes to the Draft Initial Study and Negative Declaration, following public review, will be noted as shown.

Where changes have been made to the Initial Study and Negative Declaration, the format style of adding underline to indicate new text and strikeout to indicate deletion of the prior text has been used as shown in the following example.

Example of text changes:

"This Initial Study ~~is being~~ was circulated for public and agency review from December 20, 2013, to January 20, 2014. Copies of this document, the 2003 LRDP, and the 2003 LRDP EIR ~~are~~ were made available for review at the following locations:"

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, description of environmental setting, identification of environmental effects by checklist or other similar form, explanation of environmental effects, discussion of mitigation for significant environmental effects, evaluation of the project's consistency with existing, applicable land use controls, and the name of persons who prepared the study.

2.2 TIERING PROCESS

The CEQA concept of "tiering" refers to the evaluation of general environmental matters in a broad program-level EIR, with subsequent focused environmental documents for individual projects that implement the program. This environmental document incorporates by reference the discussions in the 2003 LRDP EIR (the Program EIR) and concentrates on project-specific issues. CEQA and the CEQA Guidelines encourage the use of tiered environmental documents to reduce delays and excessive paperwork in the environmental review process. This is accomplished in tiered documents by eliminating repetitive analyses of issues that were adequately addressed in the Program EIR and by incorporating those analyses by reference.

Section 15168(d) of the CEQA Guidelines provides for simplifying the preparation of environmental documents on individual parts of the program by incorporating by reference analyses and discussions that apply to the program as a whole. Where an EIR has been prepared or certified for a program or plan, the environmental review for a later activity consistent with the program or plan should be limited to effects that were not analyzed as significant in the prior EIR or that are susceptible to substantial reduction or avoidance (CEQA Guidelines Section 15152[d]).

This Initial Study is tiered from the UC Davis 2003 LRDP EIR in accordance with Sections 15152 and 15168 of the CEQA Guidelines and Public Resources Code Section 21094. The 2003 LRDP EIR is a Program EIR that was prepared pursuant to Section 15168 of the CEQA Guidelines. The 2003 LRDP is a comprehensive land use plan that guides physical development on campus to accommodate projected enrollment increases and expanded and new program initiatives. The 2003 LRDP EIR analyzes full implementation of uses and physical development proposed under the 2003 LRDP, and it identifies measures to mitigate the significant adverse program-level and cumulative impacts associated with that growth. The Emerson Hall Replacement Project (Project) is an element of the growth that was anticipated in the 2003 LRDP and evaluated in the 2003 LRDP EIR.

By tiering from the 2003 LRDP EIR, this Tiered Initial Study relies on the 2003 LRDP EIR for the following:

- A discussion of general background and setting information for environmental topic areas;
- Overall growth-related issues;
- Issues that were evaluated in sufficient detail in the 2003 LRDP EIR for which there is no significant new information or change in circumstances that would require further analysis; and
- Assessment of cumulative impacts.

This Initial Study evaluates the potential environmental impacts of the Project with respect to the 2003 LRDP EIR to determine what level of additional environmental review, if any, is appropriate. As shown in the Determination in Section 6 of this document, and based on the analysis contained in this Initial Study, it has been determined that the Project would not result in any potentially significant impacts that cannot be mitigated to less than significant levels or that were not adequately addressed by the 2003 LRDP EIR. Therefore, the preparation of a Negative Declaration is appropriate (the ~~Proposed~~ Negative Declaration is presented in **Appendix A**).

This Initial Study concludes that the Project impacts are addressed by the measures adopted as part of the 2003 LRDP approval. Therefore, those 2003 LRDP EIR mitigation measures that apply to the Project, and are required in order to avoid or substantially reduce a potentially significant impact, are identified in this Initial Study. Nothing in this Initial Study in any way alters the obligations of the campus to implement the LRDP mitigation measures.

2.3 PUBLIC AND AGENCY REVIEW

This Initial Study ~~is being~~ was circulated for public and agency review from January 22, 2018, to February 20, 2018. Copies of this document, the 2003 LRDP, and the 2003 LRDP EIR are available for review at the following locations:

- UC Davis Campus Planning and Environmental Stewardship in 436 Mrak Hall on the UC Davis campus
- Reserves at Shields Library on the UC Davis campus
- Yolo County Public Library at 315 East 14th Street in Davis
- Online at http://sustainability.ucdavis.edu/progress/commitment/environmental_review/index.html

Comments on this Initial Study must ~~be~~ have been received by 5:00 p.m. on February 20, 2018, and ~~can be~~ emailed to medulcich@ucdavis.edu or sent to:

Matt Dulcich
Campus Planning and Environmental Stewardship
University of California
One Shields Avenue
436 Mrak Hall
Davis, California 95616

2.4 PROJECT APPROVALS

As a state entity principally responsible for approving or carrying out the Project, the University of California is the lead agency under CEQA and is responsible for reviewing and certifying the adequacy of the environmental document and approving the Project. The UC Regents will consider design approval for the Project (including demolition and construction) in Spring 2018.

As the Project would disturb more than 1 acre of land, the University or its contractor would apply to the State Water Resources Control Board (SWRCB) for coverage under the National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (further described in Section 7.9.4). The site demolition may also be subject to review by the Yolo-Solano Air Quality Management District (YSAQMD).

2.5 ORGANIZATION OF THE INITIAL STUDY

This Initial Study is organized into the following sections:

Section 1 – Project Information: Provides summary background information about the Project, including Project location, lead agency, and contact information.

Section 2 – Introduction: Summarizes the Initial Study's relationship to the 2003 LRDP EIR, the scope of the document, the Project's review and approval processes, and the document's organization.

Section 3 – Project Description: Includes a description of the Project, including the need for the Project, the Project's objectives, and the elements included in the Project.

Section 4 – Consistency with the 2003 LRDP: Describes the consistency of the Project with the 2003 LRDP and 2003 LRDP EIR.

Section 5 – Environmental Factors Potentially Affected: Identifies which environmental factors, if any, involve at least one significant or potentially significant impact that has not been previously addressed in the 2003 LRDP EIR and cannot be reduced to a less than significant level.

Section 6 – Determination: Indicates whether impacts associated with the Project are significant, and what, if any, additional environmental documentation is required.

Section 7 – 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 Project with respect to the 2003 LRDP EIR. This section also presents a background summary for each resource area, the standards of significance, relevant impacts and mitigation measures from the 2003 LRDP EIR, and an explanation of all checklist answers.

Section 8 – Fish and Game Determination: Indicates if the Project has a potential to impact wildlife or habitat and if an associated Fish and Game filing fee would be paid.

Section 9 – References: Lists references used in the preparation of this document. Includes the names of individuals contacted in preparation of this document.

Section 10 – Report Preparers: Lists the names of individuals involved in the preparation of this document.

Appendix A – ~~Proposed~~ Negative Declaration: Presents the ~~Proposed~~ Negative Declaration for the Project.

Appendix B – Air Quality and Greenhouse Gas Emissions Calculations: Presents the calculations conducted for the Project.

Appendix C – Cultural Resources Report: An analysis of the historical and archaeological resources that may occur on the Project site.

Appendix D – Noise Memorandum: Presents the ambient noise measurements and noise analysis for the Project.

Appendix E – Comments and Responses to Comments: Includes comments received during the public review period and written responses to environmental issues.

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3 PROJECT DESCRIPTION

REGIONAL LOCATION

The approximately 5,300-acre UC Davis campus is located in Yolo and Solano Counties approximately 72 miles northeast of San Francisco, 15 miles west of the City of Sacramento, and adjacent to the City of Davis. The campus is composed of four campus units: the central campus, the south campus, the west campus, and Russell Ranch. Most academic and extracurricular activities occur within the central campus. The central campus is bounded generally by Russell Boulevard to the north, State Route 113 (SR 113) to the west, Interstate 80 (I-80) and the Union Pacific Railroad tracks to the south, and A Street to the east. The south campus is located south of I-80 and north of the South Fork of Putah Creek. The west campus is bounded by SR 113 to the east, Putah Creek to the south, Russell Boulevard to the north, and extends approximately one-half-mile west of County Road 98. The south and west campus units are contiguous with the central campus, and are used primarily for field teaching and research. The approximately 1,600-acre Russell Ranch portion of the campus lies to the west, separated from the west campus by approximately 1.5 miles of privately owned agricultural land. Russell Ranch was purchased in 1990 for campus uses, including large-scale agricultural and environmental research, study of sustainable agricultural practices, and habitat mitigation. Russell Ranch is bordered roughly by County Road 96 on the east, Putah Creek on the south, Covell Boulevard on the north, and Russell Boulevard and privately owned agricultural land on the west and northwest.

The Emerson Hall Replacement Project (“Project”) site is located north of Russell Boulevard within the City of Davis, north of the central campus (see **Figure 1, Project Location**). Emerson Hall is one of three residential buildings that, along with a dining commons building, comprise the Cuarto Residence Hall Area. The Cuarto area is an off-campus University student housing development. It is arranged around Oxford Circle, located north of Russell Boulevard, south of Wake Forest Drive, and west of Sycamore Lane.

PROJECT OVERVIEW

UC Davis proposes to demolish Emerson Hall, which is a part of the existing Cuarto Residence Hall Area, and construct a new 180,000-gross-square-foot (gsf) residence hall. The existing three-story 118,000 gsf building was constructed in 1967 and houses 500 students. The new building would provide improved energy efficiency and an upgraded design for improved livability and student enjoyment, along with addressing current deficiencies. The Project would increase the housing on the site by 200–300 beds to provide 700–800 beds. The residential buildings would also provide space for lounge and study areas, a community kitchen, laundry facilities, an academic advising center, and other support space.

The proposed demolition is anticipated to begin in 2019. Student residents would move to the new building at the beginning of the Fall 2022 academic year.

PROJECT SITE

Existing Residence Hall

The existing Emerson Hall was built in 1967 and is part of the off-campus Cuarto Residence Hall Area (see **Figure 2, Project Site Boundary**). Emerson Hall is a three-story building that is 118,000 gsf in size. The building includes two inner courtyards, one with a grass lawn area and one with a swimming pool. Emerson accommodates 500 students, in double-occupancy rooms. The rooms are arranged in either two-bedroom (four person) or three-bedroom (six person) suites with a common living area and one or two bathrooms. Emerson Hall is LEED Silver certified under the LEED O+M system for existing buildings.

The building site is approximately 1.9 acres and includes landscaping, sidewalks, bicycle parking, and vehicle parking. There are 41 parking spaces east of the building. Bicycle parking is located on the south side of the building (capacity of the bicycle racks is approximately 210, but bicycles tend to double up the rack spaces, resulting in more parked bicycles).

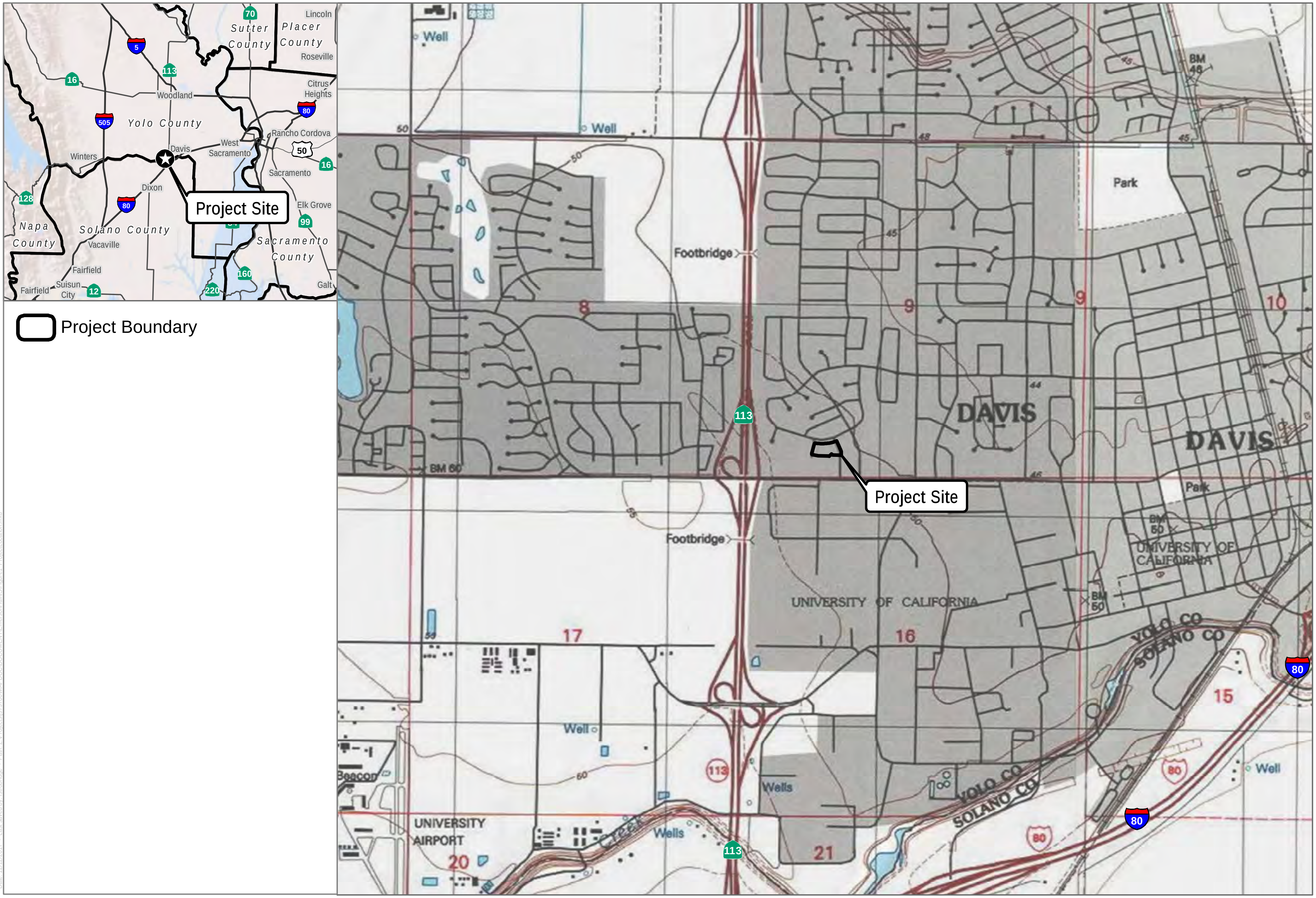
In addition to Emerson Hall, Cuarto consists of Webster Hall, Thoreau Hall, and a Dining Commons. The buildings comprise a 4.43-acre site, located around Oxford Circle.

Existing Land Uses

The land uses surrounding the Project site include the following:

- **North:** The Wake Forest Apartments, a privately owned multifamily development, is located to the north of the Project site across Wake Forest Drive. Another multifamily development, University Commons, is located east of Wake Forest Apartments.
- **East:** East of the Project are the University Court Apartments, a privately owned multifamily development.
- **South:** Cuarto Dining Commons is directly south of Emerson Hall on the east side. Webster Hall, currently being reconstructed, and Thoreau Hall are located on the south side of Oxford Circle. The Oxford Circle parking lot sits to the south between Emerson Hall and Thoreau and Webster Halls, in the middle of the Cuarto Residence Hall Area.
- **West:** A neighborhood park comprised of a large manicured grass lawn surrounded by mature trees is located to the west of the Project site across Oxford Circle. The park includes a playground and a covered picnic area. Other developments on Oxford Circle, directly west of the Cuarto Residence Hall Area, include a vacant building at 650 Oxford Circle (formerly a fraternity house), and the La Casa de Flores multifamily development.

The 2003 Long Range Development Plan (LRDP) is the guiding land use planning document for the UC Davis campus. The 2003 LRDP land use designation for the Project site is *Student Housing,* indicating that the intended long-term use of the Project site is for student housing functions. The Project site is designated as High-Density Residential by the City of Davis in its General Plan (City of Davis 2007) and zoning ordinance (City of Davis Municipal Code, Chapter 40). Although the University of California is not subject to local zoning ordinances, the proposed use is consistent with the City zoning district, and the design will reflect City development standards to the extent feasible.



SOURCE: USGS 7.5-Minute Series MerrittQuadrangle
Township 8N; Range 2E; Section 9

DUDEK

0 1,000 2,000 Feet

FIGURE 1
Project Location
UC Davis Emerson Hall Project

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SOURCE: USFA NAIP Imagery (2016)

DUDEK

0 100 200 Feet

FIGURE 2

Project Site

UC Davis Emerson Hall Project

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PROJECT NEED AND OBJECTIVES

The 2003 LRDP anticipated development of new student housing to accommodate approximately 2,000 additional students in the central campus and 3,000 students in West Village through the academic year 2015–2016. The campus has projects under construction and has completed projects to provide a total of 2,219 new beds in the central campus, including the Cuarto Residence Hall Area, as shown in **Table 3-1, UC Davis Central Campus Housing Projects (2003 through 2017).** Through the end of 2016, 2,604 beds have been provided in West Village.

Table 3-1
UC Davis Central Campus Housing Projects (2003 through 2017)

Project Name	Net Change in Student Beds
Segundo Improvement Project	400
Tercero Housing Improvement (Phase 1 and 2)	1,200
Castilian Hall Redevelopment	-200
Tercero Expansion Phase 3	400
Tercero Expansion Phase 4	315
Webster Hall Replacement (Cuarto Residence Hall Area, estimated Fall 2019)	104
Net change 2003 to 2017	**2,219**

The Project would provide an additional 200–300 student beds (270 net new beds, assuming 20% of rooms are triple occupancy), supporting the growth of the UC Davis campus population and fulfilling student housing demand. By providing off-campus, but University-owned, student housing, the Project supports the LRDP's goal of housing an increassed number of students in University-provided housing.

Project Objectives

The campus identified the following objectives for the Project:

- **Improve the quality of University housing.** The existing facility was built in 1967. Despite several previous renovations, it does not meet the standards of the University's other residence halls, due to lack of educational program space and inferior infrastructure (e.g., IT, fire suppression, and thermal comfort).
- **Increase housing density.** The 2003 LRDP, Land Use Objective 1, proposes an increase in beds to be provided by the University. The existing site has additional capacity if the building is replaced.
- **Implement LRDP Water Resource Objectives 2, Water Conservation; and Campus Systems Resource Objective 4, Built Environment.** The Project would improve energy and water efficiency of University buildings through the replacement of older, less efficient buildings with modern buildings. By promoting energy efficiency, the Project would also support the University of California Office if the President's Carbon Neutrality Initiative.
- **Lower maintenance and operating expenses of University housing.** The primary infrastructure of the mechanical, electrical, and plumbing systems has never been replaced in the existing building, resulting in additional maintenance and risk of failure. The Project would lower maintenance costs and reduce risks of system failure.

Project Elements

Site Demolition

The existing three-story 118,000 gsf building was constructed in 1967 and houses 500 students. The existing building has two central courtyards, a landscaped west courtyard and an east courtyard with a pool. A driveway to the east provides some on-site parking and provides access to the dining commons and Webster Hall, to the south.

The demolition of Emerson Hall and site clearance is expected to take approximately four months and is proposed to occur from the Summer and Fall terms of 2019. The Project site would be fenced during demolition to prevent public access. Fire department and delivery access would be maintained on the east side of the Project site, between Russell Boulevard and Wake Forest Drive. Demolition of the site would follow the City of Davis Demolition Permit conditions to the extent feasible, and the requirements of the Yolo Solano Air Quality Management District, to further minimize any nuisance effects to surrounding properties. The demolition phase would involve the following activities.

Reuse of Materials

After closure of the buildings, furnishings and materials that are suitable for reuse would be removed and used in other campus buildings or sold/donated as surplus. Examples of these materials include beds, desks, tack boards and bulletin boards, microwave ovens, chairs, dressers, and some building equipment.

Building Demolition and Removal

Building demolition would take place in staged sequences as follows: removal of all recyclable materials such as copper pipes and copper wiring; abatement of materials containing regulatory levels of lead, asbestos, and universal wastes (e.g., fluorescent light tubes); breaking-up the buildings and foundations; and removal of the crumbled buildings. Emerson Hall buildings are wooden-framed structures with a concrete foundation. The demolished concrete foundations would be recycled if possible and the remaining debris would be sent to the county landfill. The swimming pool would be broken up and filled.

Site Circulation during Demolition Phase

The building site would be fenced off during demolition. A 20-foot-wide vehicular access for the fire department and deliveries would be maintained on the east site of the Project site, between Russell Boulevard to the south and Wake Forest Drive to the north (via the parking lot east of Emerson Hall). In the final phase of the Project, during the Summer Session (prior to opening in Fall 2022), these temporary access routes would be closed for repaving and landscaping.

Buildings

A total of approximately 180,000 gsf of residential building space would be constructed under the Project. As shown on **Figure 3, Preliminary Site Plan**, the proposed residence hall would consist of three buildings arranged around a central area. The north building (building A) would be five stories, approximately 59 feet tall, and the two other buildings would be four stories, approximately 49 feet tall. The Project would provide 700–800 student beds in 350 double- to triple-occupancy rooms. Approximately 20% of rooms would be configured for triples, but all rooms would be sized for tripling.[1] In addition to the residential bedrooms, there would be a student community kitchen, study lounges, a Resident Advisor office, large lounge, an academic advising center, laundry facilities, informal interaction space, and other support space.

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[1] With 20% of available rooms configured for triple occupancy and 80% configured for double occupancy, the total number of residents would be 770.

SOURCE: UC Davis

FIGURE 3

Preliminary Site Plan

UC Davis Emerson Hall Project

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Access and Parking

The Project site is accessible from all four sides: Wake Forest Drive to the north, a driveway to the east (which continues to Webster Hall), and Oxford Circle to the west and south. These access points would continue to provide access to the site with implementation of the Project.

Bicycle and vehicle parking is available in Oxford Circle. Additional bicycle parking would be constructed on site. An off-road bicycle lane on Russell Boulevard is accessible from Cuarto.

Student automobiles are not allowed (except by special arrangement) in university residence hall housing developments. A portion of the existing on-site parking, located on the east side of the building, would be retained and would meet the needs of visitors, including UC Davis maintenance and administrative staff, and the few students who may have special vehicle arrangements. Limited short-term parking is available on Oxford Circle. Street parking is available on Wake Forest Drive. The single family residential area north of Wake Forest Drive is subject to the City's residential parking permit system (the "P" permit disallows parking from 2 a.m. to 9 a.m. to prevent non-resident overnight parking).

Landscaping

Landscape design would use appropriate plantings, in terms of cost, durability, water efficiency, and aesthetics. To encourage infiltration and reduce runoff, consistent with stormwater regulations and LEED requirements, the Project would minimize impervious surfaces to the extent feasible. Some existing trees would need to be removed to accommodate building construction.

Utilities and Infrastructure

The Project would connect to existing utilities on-site including water, sanitary sewer, storm drainage, electricity, natural gas, and telecommunications.

- **Water:** Water service is provided by the City of Davis. There are water mains in Wake Forest Drive and Oxford Circle.
- **Sewer:** Sewer service is provided by the City of Davis. The connection is on the east side of the Project site.
- **Storm Water:** The Project would connect to the City of Davis storm water system in Wake Forest Drive and Oxford Circle.
- **Electricity:** Electricity would be provided by PG&E from the existing transformer on the east side of the Project site.
- **Natural Gas:** Natural gas service would be provided by PG&E. The proposed point of connection would be the existing 2-inch main along Oxford Circle in the northwest side of the facility.
- **Chilled Water & Steam:** The Project would not utilize chilled water or steam, as the Central Heating and Cooling Plant does not service off-campus residences.
- **Telecommunications:** The majority of all telephone, data, video, and wireless infrastructure and facilities on the campus are owned by the campus and operated by the UC Davis Communications Resources Department. The main campus switching facility is located in the Telecommunications Building. The existing facility is served by the UC Davis Communication Resources Department.

Sustainable Design Elements

The Project would comply with the UC Policy on Sustainable Practices (UC Regents 2016) and would meet the campus baseline[2] as applicable to the Project. UC Davis has targeted a LEED designation of Gold or higher for the Project. The LEED certification would require the Project to increase energy and water efficiency by using efficient appliances and insulating materials, increase stormwater infiltration by using detention basins and reducing impermeable surfaces, using low emitting paints and materials during construction, and a variety of other sustainable measures. It is anticipated that the Project would use 20% to 25% less energy than current Title 24 requirements.

Population

The Project would have 350 rooms, which can be configured for double or triple occupancy. The number of potential beds would range from 700 to 800. Assuming that 20% of the 350 rooms would be configured for triple occupancy, the Project would accommodate 770 people (including 2 staff members). This is an increase of 270 students from the existing 500 students housed in Emerson Hall. While this is an increase in the population at the Project site, the Project would serve the University's objective to house a higher proportion of students in University housing.

CONSTRUCTION SCHEDULE AND STAGING

The demolition of Emerson Hall and site clearance is expected to take approximately four months and is proposed to occur in the Summer and Fall terms of 2019. Construction is expected to take approximately 18 months, beginning in Winter 2020 and completion in Summer 2022 (to accommodate students in the 2022–2023 academic year). Construction staging would occur within the Project boundaries.

2 UC Davis has established a campus baseline, which is the minimum number of applicable *Leadership in Energy and Environmental Design* (LEED) rating system "points" that each project on the campus will achieve. With the passage of the Regental Policy on Green Building Design and Clean Energy Standards, each campus in the University of California System was required to devise a campus baseline. While the University of California System does not require each campus to apply for United States Green Building Council LEED certification, the University of California has committed to achieving a level of building performance comparable to that of LEED certification. The campus baseline provides the starting level of building performance objectives for all campus projects, with the exception of medical facilities.

4 CONSISTENCY WITH THE 2003 LRDP AND 2003 LRDP EIR

In order to determine the Project's consistency with the 2003 LRDP and 2003 LRDP EIR, the following questions must be answered:

- Is the Project included in the scope of the development projected in the 2003 LRDP?
- Is the proposed location of the Project in an area designated for this type of use in the 2003 LRDP?
- Are the changes to campus population associated with the Project included within the scope of the 2003 LRDP's population projections?
- Are the objectives of the Project consistent with the objectives adopted for the 2003 LRDP?
- Is the Project within the scope of the cumulative analysis in the 2003 LRDP EIR?

The following discussion describes the Project's relationship to and consistency with the development projections, population projections, land use designations, objectives, and cumulative impacts analyses contained in the 2003 LRDP and the 2003 LRDP EIR.

4.1 2003 LRDP SCOPE OF DEVELOPMENT

The 2003 LRDP anticipated development of new student housing in the central campus. At the time that the campus prepared the 2003 LRDP, it established a goal of providing approximately 2,000 new student beds in the central campus through the academic year 2015–2016. Overall, this goal has been met with the opening of Tercero 4 in Fall 2017. The total student housing supply in the 2017–2018 academic year is approximately 5,700 beds. The Project would add 200–300 new student beds.

4.2 2003 LRDP LAND USE DESIGNATION

The Project site is designated as Student Housing in the 2003 LRDP and would remain in that land use.

4.3 2003 LRDP POPULATION PROJECTIONS

The 2003 LRDP projected that, through 2015–2016, the on-campus population would increase to include approximately 30,000 students, 14,500 faculty and staff, and 3,240 non-UC employees for a total population of 47,740.[3] In addition, the total number of household members associated with students and employees living in on-campus housing was projected to increase to approximately 29,803. The Fall 2015 on-campus faculty and staff headcount was approximately 12,181 (UC Davis 2016), and the 2016-2017 three-quarter average on-campus student population was approximately 32,860 (UC Davis 2017). While the student population projection of 30,000 has been exceeded, the projection for total campus population remains accurate with the daily population on the campus being approximately 3,000 people less than previously projected through 2015–2016. The Project would permit additional students to live in student housing off-campus and this environmental review considers the specific effects of students living adjacent to the central campus at UC Davis. The Project would not increase student enrollment, nor add faculty and staff population to the campus, and accordingly, would not increase the campus enrollment or

3 The on-campus population includes students and employees on the UC Davis main campus and at other University owned and operated facilities in the City of Davis. The campus population is determined based on headcount, a method of counting faculty, staff, and students in which each person is counted as one unit regardless of whether he or she is employed or studying full-time or part-time. Student population figures represent student headcount averaged over the primary three academic quarters (i.e., fall, winter, spring). http://budget.ucdavis.edu/data-reports/enrollment-reports.html

employment population over existing levels. Therefore, the Project is within the 2003 LRDP's on-campus population projections.

4.4 2003 LRDP OBJECTIVES

The primary objective of the 2003 LRDP is to plan for the Davis campus' share of the University of California's short- and long- term enrollment demands. In addition, the 2003 LRDP aims to:

- create a physical planning framework to support the teaching, research, and public service mission of the campus;
- manage campus lands and resources in a spirit of stewardship for the future; and
- provide an environment that enriches campus life and serves the greater community.

The Project would support these main objectives of the 2003 LRDP by providing high-quality housing for UC Davis students in order to improve the academic experience.

The 2003 LRDP anticipates development of new student housing on the central campus to accommodate approximately 2,000 additional students through 2015–2016, including housing that was already underway at the Segundo housing complex. The Cuarto Residence Hall Area, although located off-campus, is identified as a student housing area in the 2003 LRDP Land Use Map.

In addition, the 2003 LRDP includes specific objectives that are relevant to the Project, including the following:

Community Spaces: Include physical spaces in residential areas that foster a sense of community. [LRDP Housing Section, page number 66].

> The updated building would include common spaces, additional landscaping, and reduced behicle parking that would improve the connections of Emerson Hall to the surrounding Cuarto development.

Infill Housing: Allow for infill student housing within the freeways for first year students at Primero, Segundo, and Tercero neighborhoods [LRDP Housing Section, p. 66].

> While Cuarto is not called out in this objective, additional infill in this University-owned residence area would accommodate the housing needs of the growing student population.

In addition, the Project would be consistent with the design goals of the *UC Davis Physical Design Framework* (UC Davis 2008).

4.5 2003 LRDP EIR CUMULATIVE IMPACTS ANALYSES

In addition to evaluating the environmental effects directly associated with projected campus development, the 2003 LRDP EIR evaluates the cumulative effects of campus development combined with off-campus development. The cumulative context considered in the 2003 LRDP EIR varies, depending on the nature of the issue being studied, to best assess each issue's geographic extent. For example, the cumulative impacts on water and air quality can be best analyzed within the boundaries of the affected resources, such as water bodies and air basins. For other cumulative impacts, such as hazard risks, traffic, and the need for new public service facilities, the cumulative impact is best analyzed within the context of the population growth and associated development that are expected to occur in the region.

As discussed in Sections 4.1 through 4.4, the Project is within the scope of campus development projected in the 2003 LRDP EIR. However, it is now 2018 and the proposed Project would be implemented in 2019, which is beyond the timeframe considered in the cumulative analysis for the 2003 LRDP EIR (2015–2016). Therefore, UC Davis has evaluated the status of growth and development in the region as of 2016 (last complete data year) in comparison to the local growth projections considered in the 2003 LRDP EIR to determine whether actual growth differs from the projections and whether such a difference could substantially change the 2003 LRDP EIR conclusions regarding cumulative impacts. Within each environmental impact discussion (Section 7), UC Davis considers the potential for the proposed Project to contribute to cumulative impacts and whether the Project's contribution would exceed the cumulative impact determinations identified in the 2003 LRDP EIR.

The 2003 LRDP EIR looked at regional growth in the context of the cities of Davis, Dixon, Winters, and Woodland as well as in the context of Yolo and Solano Counties. Table 4.11-5 of the 2003 LRDP EIR presented the anticipated population and housing growth through 2015. Those projections have been compared to the actual 2015 populations for these jurisdictions in **Table 4-1, 2003 LRDP EIR Population Projections vs Actual**. Growth in the region has been lower than anticipated for all jurisdictions except the City of Davis, which grew by 1,074 persons (or 0.016%) more than anticipated.

Regardless, the Project's contribution would not exceed the cumulative impact determinations identified in the 2003 LRDP EIR, as indicated within each environmental impact discussion (Section 7).

Table 4-1
2003 LRDP EIR Population Projections vs Actual

Jurisdiction	LRDP EIR Projected 2015	Actual 2015	Difference
City of Davis	67,240	68,314	1,074
City of Winters	10,610	7,214	-3,396
City of Woodland	60,415	57,526	-2,889
Yolo County	227,130	214,555	-12,575
City of Dixon	24,300	19,018	-5,282
Solano County	512,000	431,498	-80,502
Sacramento County	1,574,420	1,495,297	-79,123
Three-County Total	2,313,550	2,141,350	-172,200

Source: UC Davis 2003, Table 4.11-5; California Department of Finance 2016.

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5 ENVIRONMENTAL RESOURCES POTENTIALLY AFFECTED

The environmental resources, if checked below, would be potentially affected by this Project and would involve at least one impact that is a significant or potentially significant impact that has not been previously addressed in the 2003 LRDP EIR and cannot be reduced to a less than significant level as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agricultural Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology, Soils & Seismicity
☐ Hazards & Hazardous Materials	☐ Hydrology & Water Quality	☐ Land Use & Planning
☐ Mineral Resources	☐ Noise	☐ Population & Housing
☐ Public Services	☐ Recreation	☐ Transportation & Traffic
☐ Utilities & Service Systems	☐ Mandatory Findings of Significance	

As indicated in this checklist and based on the analysis presented in this Initial Study, it has been determined that for all resource areas, the Project would not result in any significant impacts that cannot be mitigated to a less than significant level or are not adequately addressed by the 2003 LRDP EIR. This Initial Study has concluded that the Project would incrementally contribute to, but would not exceed, certain significant cumulative impacts previously identified in the 2003 LRDP EIR, and that for such impacts, no new mitigation measures, other than those previously identified in the 2003 LRDP EIR have been identified to further reduce the impact. The Project would not require any project-specific mitigation measures and completion of a Negative Declaration is therefore appropriate. The ~~proposed~~ Negative Declaration is included in **Appendix A**.

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6 DETERMINATION

On the basis of this initial evaluation:

☑ The Project COULD NOT have a significant effect on the environment that has not been previously addressed in the 2003 LRDP EIR, and no new mitigation measures, other than those previously identified in the 2003 LRDP EIR, are required. A NEGATIVE DECLARATION will be prepared. The draft NEGATIVE DECLARATION is included in Appendix A.

☐ The 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 effect to a less than significant level. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ The Project MAY have a potentially significant effect on the environment that was not previously addressed in the 2003 LRDP EIR. A TIERED ENVIRONMENTAL IMPACT REPORT will be prepared to address new impacts not previously identified in the 2003 LRDP EIR.

Matt Dulcich, AICP Director of Environmental Planning	Date

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7 EVALUATION OF ENVIRONMENTAL IMPACTS

Introduction

The University has defined the column headings in the Initial Study as follows:

- **Potentially Significant Impact:** This column is checked if there is substantial evidence that the Project's effect may be significant. If the Project may result in one or more Potentially Significant Impacts, an EIR is required.
- **Less than Significant with Project-level Mitigation Incorporated:** This column is checked where incorporation of project-specific mitigation measures will reduce an effect from "Potentially Significant Impact" to "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.
- **Project Impact Addressed in the 2003 LRDP EIR:** This column is checked where the potential impacts of the Project were adequately addressed in the 2003 LRDP EIR and mitigation measures identified in the LRDP EIR will mitigate any impacts of the 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 (including section/page numbers) the relevant analysis in the LRDP EIR.
- **Less than Significant Impact:** This column is checked when the Project will not result in any significant effects. The effects may or may not have been discussed in the LRDP EIR. The project impact is less than significant without incorporation of LRDP or project-level mitigation.
- **No Impact:** This column is checked when a project would not result in any impact in the category or the category does not apply. "No impact" answers need to be adequately supported by the information sources cited or should note that the impact does not apply to projects like the one involved (e.g., the Project 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 project specific screening analysis.)

7.1 AESTHETICS

7.1.1 Background

Section 4.1 of the 2003 LRDP EIR addresses the aesthetics effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the 'Setting' subsection of Section 4.1 of the 2003 LRDP EIR.

Environmental Setting

The Project site is located within the City of Davis, adjacent to the UC Davis central campus. Views within the Davis area are generally of two types: open views of agricultural land and supporting facilities with views of hills to the west, and views of developed areas within UC Davis and the City of Davis. The Project site is surrounded by the Wake Forest Apartments and Wake Forest Drive to the north, the University Court Apartments to the east, Thoreau and Webster Halls to the south, and a park dominated by a large grass lawn surrounded by mature trees to the west.

Design review of campus development projects (including off campus University development) takes place during the project planning, design, review, and approval processes to sustain valued elements of the visual environment, to assure new projects contribute to a connected and cohesive campus environment, and to otherwise minimize adverse aesthetics effects as feasible. Formal design review by the campus Design Review Committee takes place for every major capital project. This Committee includes standing members from the Offices of Resource Management and Planning, Design and Construction Management, Grounds, and other departments concerned with potential aesthetic effects, as well as program representatives and invited design professionals with expertise relevant to the project type. Campus design standards and plans that provide the basis for design review include the 2003 LRDP, the UC Davis Physical Design Framework, the Campus Standards and Design Guide manual, the Campus Architectural Design Guidelines, and the Campus Core Study.

Project Site

The Project site is part of the 4.43-acre Cuarto Residence Hall Area adjacent to the UC Davis central campus. In addition to Emerson Hall, the Cuarto Residence Hall Area is composed of Webster Hall, Thoreau Hall and a Dining Common. Public views of the site include Oxford Circle and Wake Forest Drive (see **Figure 4, Existing Views**). The site is also visible from adjacent Cuarto resident halls, Wake Forest Apartments, University Court apartments, and the park to the west of the Project site. The existing three-story structure has limited design features, including an irregular stepped facade on the east and north building facades, metal-framed window shades, and a setback first floor (with a brick façade contrasting with the stucco of the upper two floors).

7.1.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers an aesthetic impact significant if growth under the 2003 LRDP would:

- Have a substantial adverse effect on a scenic vista.

  A scenic vista is defined as a publicly accessible viewpoint that provides expansive views of a highly valued landscape. On campus, the open view across agricultural lands west to the Coast Range is considered a scenic vista. This vista is primarily viewed from public viewpoints along SR 113, Hutchison Drive, La Rue Road, and Russell Boulevard.

- Substantially degrade the existing visual character or quality of the site and its surroundings.

  For the campus, this standard is interpreted in terms of the effect of development under the 2003 LRDP on the valued elements of the visual landscape identified in the LRDP, or the effect associated with allowing incompatible development in or near areas with high visual quality such as Putah Creek and the Arboretum Waterway.

- Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

An additional standard from the CEQA Guidelines Appendix G Environmental Checklist related to state scenic highways (Item b in the checklist in Section 7.1.4) was found not applicable to campus growth under the 2003 LRDP.

7.1.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on aesthetics are evaluated in Section 4.1 of the 2003 LRDP EIR. The Project is within the scope of analysis in the 2003 LRDP EIR. Significant and potentially significant aesthetics impacts identified in the 2003 LRDP EIR that are relevant to the Project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. Mitigation measures are relevant to reduce the magnitude of cumulative Impact 4.1-6, but this impact is identified as significant and unavoidable because the feasibility and/or implementation of mitigation falls within other jurisdictions and therefore cannot be guaranteed by the University of California.

View from Wake Forest Drive

View from Oxford Circle

FIGURE 4

Existing Views

UC Davis Emerson Hall Project

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2003 LRDP EIR Impacts AESTHETICS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.1-2	Development on campus from implementation of the 2003 LRDP could degrade the visual character of the campus by substantially degrading the valued elements of the visual landscape identified in the 2003 LRDP.	PS	LS
4.1-3	Development under the 2003 LRDP could create substantial light or glare on campus that could adversely affect daytime or nighttime views in the area.	PS	LS
4.1-4	Development under the 2003 LRDP together with other development in the region could affect local scenic vistas west across agricultural lands to the Coastal Range.	S	SU
4.1-5	Development allowed under the 2003 LRDP, in conjunction with other development in the region could substantially degrade the existing visual character or quality of the region.	S	SU
4.1-6	Implementation of the 2003 LRDP together with cumulative development in the region would create new sources of light and glare that could adversely affect daytime or nighttime views in the region.	S	SU

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the Project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the Project description and will not be readopted in this Initial Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement the 2003 LRDP EIR mitigation measures.

2003 LRDP EIR Mitigation Measures AESTHETICS	
4.1-2(a)	New structures, roads, and landscaping at UC Davis shall be designed to be compatible with the visual elements and policies identified in the 2003 LRDP.
4.1-2(b)	Prior to design approval of development projects under the 2003 LRDP, the campus Design Review Committee must determine that project designs are consistent with the valued elements of the visual landscape identified in the 2003 LRDP, applicable planning guidelines, and the character of surrounding development so that the visual character and quality of the project area are not substantially degraded.
4.1-3(a)	Design for specific projects shall provide for the use of textured nonreflective exterior surfaces and nonreflective glass.
4.1-3(b)	Except as provided in LRDP Mitigation 4.1-3(c), all new outdoor lighting shall utilize directional lighting methods with shielded and cutoff type light fixtures to minimize glare and upward directed lighting.
4.1-3(c)	Non-cutoff, non-shielded lighting fixtures used to enhance nighttime views of walking paths, specific landscape features, or specific architectural features shall be reviewed by the Campus Design Review Committee prior to installation to ensure that: (1) the minimum amount of required lighting is proposed to achieve the desired nighttime emphasis, and (2) the proposed illumination creates no adverse effect on nighttime views.
4.1-3(d)	The campus will implement the use of the specified lighting design and equipment when older lighting fixtures and designs are replaced over time.

2003 LRDP EIR Mitigation Measures AESTHETICS	
4.1-6(a)	Implement LRDP Mitigation 4.1-3(a) and (b).
4.1-6(b)	The City of Davis and other surrounding jurisdictions can and should adopt (if necessary) and implement development standards and guidelines, which support the minimal use of site lighting for new developments.

7.1.4 Environmental Checklist and Discussion

AESTHETICS Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☐	☑
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☐	☑
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☑	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☑	☐	☐

a) The 2003 LRDP EIR defined a scenic vista as an expansive view of a highly valued landscape from a publicly accessible viewpoint, and identified the only scenic vista on the UC Davis campus to be the view west across agricultural land to the Coast Range. On and near campus, viewpoints along SR 113, Hutchison Drive, La Rue Road, and Russell Boulevard provide scenic vistas to the west across agricultural land to the Coast Range (2003 LRDP EIR, page 4.1-7). Impact 4.1-4 of the 2003 LRDP EIR determined that cumulative development in the Davis region could obscure some scenic vistas, including development on campus under the 2003 LRDP. The Project would take place within a developed portion of the City of Davis, adjacent to the central campus. The Project would occur on the north side of Russell Boulevard and would not affect long-range views west toward the Coast Range. No impact on scenic vistas would occur with the Project.

The 2003 LRDP EIR determined that campus development under the 2003 LRDP, in conjunction with other development in the region, could affect local scenic vistas west across agricultural lands to the Coastal Range (LRDP Impact 4.1-4). Given the analysis herein, the Project would not contribute to this significant cumulative impact. The impact of cumulative growth on scenic vistas was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5), conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

b) According to the California Department of Transportation (Caltrans) State Scenic Highway Mapping System, neither the campus nor the Project site is located near a state scenic highway (Caltrans 2016). Additionally, the Project site is fully developed with student housing and does not contain any scenic resources. Therefore, the Project would not damage scenic resources, either within or outside of a state scenic highway. No impact would occur.

c) The 2003 LRDP EIR found that development on the campus under the 2003 LRDP could degrade the visual character of the campus by substantially degrading the valued elements of the campus' visual landscape, which are identified above in the background discussion and include specific areas containing large numbers of trees, historic buildings, and open space areas (Impact 4.1-2). The Project would have no effect on valued elements of the UC Davis visual landscape because it would not be located in an area identified as having valued elements of the visual landscape, nor would it disturb an area of high visual quality. The Project would be located off-campus, on a site with existing student residential buildings. The new four- and five-story structure would be taller than the existing three-story building on the site but would be consistent with the existing visual character of the site (multi-family residential). Thoreau Hall, a student residential building to the south of the Project, is four stories, and the Webster Hall building to the south of the Project site that will be constructed by Fall of 2019 will include four stories. The Project would also update the landscaping on the northern side, the primary public view of the site. The change to the visual character of the Project area would not represent a significant adverse effect. Compliance with LRDP design principles and the design review process (per LRDP Mitigation Measures 4.1-2a and b) would ensure that Project impacts would be less than significant.

The 2003 LRDP EIR determined that campus development under the 2003 LRDP, in conjunction with other development in the region, could conflict with the area's visual elements and other aspects of aesthetic character (LRDP Impact 4.1-5). The Project would include demolition of the existing 118,000 gsf Emerson Hall building and construction of a new 180,000 gsf residence hall. Because all development would be within the developed Cuarto neighborhood and consistent with surrounding visual elements, and consistent with LRDP planning and design guidelines (per the 2003 LRDP EIR Mitigation Measure 4.1-2(a)), the Project's contribution to this significant cumulative impact would not be cumulatively considerable. This cumulative impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5), conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

d) The 2003 LRDP EIR found that development on the campus under the 2003 LRDP could create substantial light or glare that could adversely affect daytime or nighttime views in the area (Impact 4.1-3). The Project would demolish the existing structure and during construction, lights could potentially be used for security, which would contribute to nighttime glare. However, this is a short-term effect. The Project would construct a new residence hall building, which would be one-story taller than the existing three-story building. Therefore, additional light and glare may be produced on the Project site. In compliance with LRDP Mitigation Measure 4.1-3(a), the Project would use textured non-reflective exterior surfaces and non-reflective glass, which would reduce the glare from the new buildings. In compliance with LRDP Mitigation Measure 4.1-3(b-d), new outdoor lighting associated with the Project would be directional lighting with shielded and cutoff type light fixtures to minimize glare and light spill, except in specific, limited locations where lighting would be used to enhance nighttime views of walking paths, specific landscape features, or specific architectural features. In compliance with this measure, the Campus Design Review Committee will also review the Project's use of non-directional lighting design to ensure that no adverse effects on nighttime views would occur. As the site is already developed, replacement of existing lighting with more efficient lighting would not result in a significant impact. With implementation of LRDP Mitigation Measures 4.1-3(a-d), which is included in the Project, the Project's impact associated with light and glare would be less than significant.

The 2003 LRDP EIR found that campus development under the 2003 LRDP in conjunction with other cumulative development in the region would add new sources of light and glare that could adversely affect daytime or nighttime views in the area (LRDP Impact 4.1-6). LRDP Mitigation 4.1-6(a), included in the Project, requires the campus to implement Mitigation Measures 4.1-3(a) and (b), discussed above. LRDP Mitigation Measure 4.1-6(b) states that local jurisdictions can and should adopt and implement development standards and guidelines that support reduced lighting. However, the feasibility and/or implementation of LRDP Mitigation Measure 4.1-6(b) cannot be guaranteed by the University of California because enforcement and monitoring fall within other jurisdictions. For this reason, the cumulative impact is considered significant and unavoidable. The Project's contribution to this significant cumulative impact would not be cumulatively considerable given that the Project would remove the existing Emerson Hall building and replace it with a new residence hall building and the Project would result in the use of lighting with shielded and cutoff type light fixtures to minimize glare and upward directed lighting. This cumulative impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5), no conditions have changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

7.2 AGRICULTURAL RESOURCES

7.2.1 Background

Section 4.2 of the 2003 LRDP EIR addresses the agricultural resources effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the 'Setting' subsection of Section 4.2 of the 2003 LRDP EIR.

Environmental Setting

As discussed in the 2003 LRDP EIR, of the approximately 5,300 acres of campus land, the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) designates approximately 3,700 acres as Prime Farmland and approximately 90 acres as Farmland of Local Importance. The FMMP designates the remaining 1,520 acres of campus land as Urban and Built-Up (approximately 1,400 acres) and Other Land (approximately 120 acres). Most of the campus' agricultural lands are located on the west and south campuses and at Russell Ranch. The central campus includes land primarily designated as Urban and Built-Up, but small areas within the central campus that are used for teaching and research fields and community gardens are designated as Prime Farmland.

The 2003 LRDP EIR identifies that development under the 2003 LRDP could result in conversion of approximately 745 acres of campus land that is designated Prime Farmland by the California Department of Conservation to nonagricultural uses. Approximately 330 acres of this land would be converted to habitat at Russell Ranch, which would not result in an irreversible loss of prime soil. Mitigation under the 2003 LRDP EIR requires the conservation of Prime Farmland at a one-to-one (1:1) ratio for Prime Farmland converted to developed uses and a one-third–to–one (1/3:1) ratio for Prime Farmland converted to habitat at Russell Ranch.

Project Site

The Project site is developed student housing located adjacent to the central campus, within the City of Davis, and is designated as Urban and Built-Up Land on the California Department of Conservation FMMP Map for Yolo County (CDC 2015).

7.2.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers an agricultural impact significant if growth under the 2003 LRDP would:

- Convert prime farmland, unique farmland or farmland of statewide importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to nonagricultural use.
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland considered prime, unique, or of statewide importance to nonagricultural use.
- Conflict with existing zoning for agricultural use or a Williamson Act contract.

7.2.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on agricultural resources are evaluated in Section 4.2 of the 2003 LRDP EIR. The Project is within the scope of analysis in the 2003 LRDP EIR. As discussed in Section 7.2.4, the Project would not impact agricultural resources or Prime Farmland. For this reason, any mitigation measures identified in the 2003 LRDP EIR are not relevant to the Project.

2003 LRDP EIR Impacts AGRICULTURAL RESOURCES		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.2-3	Cumulative development would result in the conversion of prime farmland, unique farmland, and/or farmland of statewide importance to nonagricultural use.	S	SU

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

7.2.4 Environmental Checklist and Discussion

AGRICULTURAL AND FORESTRY RESOURCES Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
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?	☐	☐	☐	☑	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☐	☑
c) Confict with existing zoning for, or cause rezoning of forest land, timberland, or Timberland Production land?	☐	☐	☐	☐	☑
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☐	☑
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?	☐	☐	☐	☐	☑

a) The FMMP designates the Project site as Urban and Built-Up Land. The Project would not convert any Important Farmland to non-agricultural use. No impact would occur.

Impact 4.2-3 of the 2003 LRDP EIR concluded that campus development under the 2003 LRDP, in conjunction with other development in the region, would result in a significant and unavoidable cumulative impact related to the conversion of Important Farmland to non-agricultural uses in the region. Although Yolo County, Solano County, the City of Davis, and UC Davis have established goals to preserve agricultural lands, the 2003 LRDP EIR anticipated that development proposed under the City of Davis General Plan Update could result in the conversion of approximately 450 acres of prime farmland through 2010. The 2003 LRDP also stated that additional conversion of agricultural land could occur beyond the City's current planning horizon through 2015–2016. The loss of approximately 745 acres of prime farmland on the UC Davis campus in combination with the conversion of prime farmland anticipated under the City's General Plan represents a significant adverse impact. Although UC Davis requires mitigation for loss of prime farmland on campus through conserving 525 acres of prime farmland at Russell Ranch (2003 LRDP Mitigation 4.2-3), it does not replace agricultural land lost. Because reconversion of developed lands to agricultural uses is considered infeasible, the cumulative loss of prime farmland is considered a significant and unavoidable impact.

As described previously, the Project would not convert Farmland to non-agricultural use, and therefore would not contribute to the campus' significant and unavoidable farmland conversion impact. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

b) Campus lands are state lands and are not eligible for Williamson Act agreements, nor are they subject to local zoning controls. The Project site is designated as Urban and Built-Up Land by FMMP and *Student Housing* in the 2003 LRDP. Additionally, the land is designated by the City of Davis for High Density Residential uses in the General Plan and zoning ordinance. Therefore, the Project would not conflict with existing zoning for agricultural use or a Williamson Act contract, and no impact would occur.

c) The CEQA Guidelines were amended after the 2003 LRDP EIR was certified to add new checklist criteria related to forest land, timberland, and Timberland Production land that were not required or considered in the LRDP EIR. The Project would not have impacts related to conflicts with existing zoning for forest land or timberland, as no lands zoned for such use are present on or in the vicinity of the Project site. No impact would occur.

d,e) The CEQA Guidelines were amended after the 2003 LRDP EIR was certified to add new checklist criteria related to forest lands and agriculture that were not required or considered in the LRDP EIR. The Project would not have impacts related to loss or conversion of forest lands because no forest lands are present on or in the vicinity of the Project site. There is no agricultural land on the Project site. For this reason and the reasons discussed previously, the Project would not involve changes to the existing environment that could cause conversion of Farmland or forest land to non-agricultural use. No impact would occur.

7.3 AIR QUALITY

7.3.1 Background

Section 4.3 of the 2003 LRDP EIR addresses the air quality effects of campus growth under the 2003 LRDP on air quality. The following discussion summarizes information presented in the 'Setting' subsection of Section 4.3 of the 2003 LRDP EIR and provides updated information, as relevant.

Environmental Setting

Climate and Topography

The Project is located within the Sacramento Valley Air Basin (SVAB), which includes Sacramento, Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yuba, Yolo, and portions of Solano and Placer counties and is within the jurisdictional boundaries of the YSAQMD. The SVAB extends from south of Sacramento to north of Redding and is bounded on the west by the Coast Ranges and on the north and east by the Cascade Range and Sierra Nevada. The Project is located within southern Yolo County. The area experiences hot dry summers while winters tend to be mild and rainy.

Weather patterns throughout the SVAB are affected by geography. Mountain ranges tend to buffer the basin from the marine weather systems that originate over the Pacific. However, the Carquinez Strait creates a breach in the Coast Range on the west of this basin, which exposes the midsection of the SVAB to marine weather. This marine influence moderates climatic extremes, such as the cooling that sea breezes provide in summer evenings. These breezes also help to move pollutants out of the valley. During about half of the days from July to September, however, a phenomenon called the "Schultz Eddy" prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out of the valley, the Schultz Eddy causes the wind pattern to circle back south. Essentially this phenomenon causes the air pollutants to be blown south toward the Sacramento area. This effect exacerbates the pollution levels in the area and increases the likelihood of violating federal or state standards. The effect normally dissipates around noon when the delta sea breeze arrives.

Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter equal to or less than 10 microns in aerodynamic diameter (PM_{10}), particulate matter equal to or less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$), and lead (Pb). In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

Toxic Air Contaminants

Toxic air contaminants (TACs) are toxic substances released into the air, which have the potential to cause adverse health effects in humans. TACs are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources such as automobiles; and area sources such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and non-carcinogenic effects. Non-carcinogenic effects typically affect one or more target organ systems and may be experienced either on short-term (acute) or long-term (chronic) exposure to a given TAC. Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos.

Regulatory Setting

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The U.S. Environmental Protection Agency (EPA) is responsible for implementing most aspects of the federal Clean Air Act, including setting National Ambient Air Quality Standards (NAAQS) for major air pollutants; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric O_3 protection measures, and enforcement provisions. The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to the California Air Resources Board (CARB), with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products. CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS.

The designation of an area as attainment or nonattainment of the NAAQS and CAAQS is based on monitored data throughout the SVAB. The entire SVAB is designated as a nonattainment area for both federal and state O_3 standards (U.S. EPA 2017a; CARB 2016). The EPA has classified the SVAB as a "severe" nonattainment area for the 8-hour O_3 standard and has mandated that it achieve attainment no later than June 15, 2019. In addition, the SVAB is designated as a nonattainment area for the state PM_{10} standard and nonattainment for the federal $PM_{2.5}$ standard. The SVAB is in attainment or unclassified for all other criteria air pollutants.

Project Site

The Project site is part of the 4.43-acre Cuarto Residence Hall Area adjacent to the UC Davis central campus. In addition to Emerson Hall, the Cuarto Residence Hall Area is composed of Webster Hall, Thoreau Hall and a Dining Commons. Existing sources of air emissions within the Project site includes emissions from mobile sources (vehicular traffic), area sources (consumer products, architectural coating re-application, landscaping) and energy sources (space heating, water heating).

7.3.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers an air quality impact significant if growth under the 2003 LRDP would:

Criteria Pollutants

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation. (According to the YSAQMD, emissions of nitrogen oxides (NO_x) and reactive organic gases (ROG) in excess of 10 tons per year, PM_{10} emissions of 80 pounds a day, or CO emissions violating a state ambient air standard for CO would be considered significant (YSAQMD 2007).
- 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).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

Toxic Air Contaminants

- Contribute to the probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeding the AB 2588 and Proposition 65 threshold of 10 in one million.
- Result in a noncarcinogenic (chronic and acute) health hazard index greater than the AB 2588 threshold of 1.0.

7.3.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on air quality are evaluated in Section 4.3 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the Project is within the scope of analysis in the 2003 LRDP EIR. Significant and potentially significant air quality impacts identified in the 2003 LRDP EIR that are relevant to the Project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. Mitigation is required to reduce the magnitude of project-level LRDP Impact 4.3-1 and cumulative LRDP Impact 4.3-6, but these impacts are identified as significant and unavoidable because they cannot be fully mitigated. Mitigation is identified to reduce the magnitude of project-level LRDP Impact 4.3-3, but this impact is identified as significant and unavoidable due to uncertainty about the effectiveness of the mitigation.

2003 LRDP EIR Impacts AIR QUALITY		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.3-1	Implementation of the 2003 LRDP would result in daily operational emissions above the YSAQMD thresholds that may contribute substantially to a violation of air quality standards or hinder attainment of the regional air quality plan.	S	SU
4.3-3	Emissions from construction activities associated with the 2003 LRDP would exceed YSAQMD thresholds.	S	SU
4.3-6	Implementation of the 2003 LRDP, in conjunction with other regional development, would result in a cumulatively considerable increase of non-attainment pollutants.	S	SU
4.3-8	Regional growth could result in an increase in toxic air contaminants if compensating technological improvements are not implemented.	PS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the Project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the Project description and will not be readopted. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

2003 LRDP EIR Mitigation Measures

AIR QUALITY

4.3-1(a) Vehicular Sources. The following measures will be implemented to reduce emissions from vehicles, as feasible.

- The campus shall continue to actively pursue Transportation Demand Management to reduce reliance on private automobiles for travel to and from the campus.
- Provide pedestrian-enhancing infrastructure to encourage pedestrian activity and discourage vehicle use.
- Provide bicycle facilities to encourage bicycle use instead of driving.
- Provide transit-enhancing infrastructure to promote the use of public transportation.
- Provide facilities to accommodate alternative-fuel vehicles such as electric cars and CNG vehicles.
- Improve traffic flows and congestion by timing of traffic signals to facilitate uninterrupted travel.
- When the campus purchases new vehicles, the campus will evaluate the practicality and feasibility of acquiring low-pollution vehicles that are appropriate for the task and will purchase these types of vehicles when practical and feasible. When replacing diesel engines in existing equipment, the campus will install up-to-date technology.

4.3-1(b) Area Sources. The following measures will be implemented to reduce emissions from area sources, as feasible.

- Use solar or low-emission water heaters in new or renovated buildings.
- Orient buildings to take advantage of solar heating and natural cooling and use passive solar designs.
- Increase wall and attic insulation in new or renovated buildings.

- For fireplaces or wood-burning appliances, require low-emitting EPA certified wood-burning appliances, or residential natural-gas fireplaces.
- Provide electric equipment for landscape maintenance.

4.3-1(c) The campus will work with the YSAQMD to ensure that emissions directly and indirectly associated with the campus are adequately accounted for and mitigated in applicable air quality planning efforts. The YSAQMD can and should adopt adequate measures consistent with applicable law to ensure that air quality standard violations are avoided.

4.3-3(a) The campus shall include in all construction contracts the measures specified below to reduce fugitive dust impacts, including but not limited to the following:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purpose, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- When demolishing buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.
- When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least two feet of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices also is expressly forbidden.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions by utilizing sufficient water or chemical stabilizer/ suppressant.

4.3-3(b) The campus shall include in construction contracts for large construction projects near receptors, the following control measures:

- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- To the extent feasible, limit area subject to excavation, grading, and other construction activity at any one time.
- Limit the area subject to excavation, grading, and other construction activity at any one time.

4.3-3(c) The campus shall implement the following control measures to reduce emissions of ozone precursors from construction equipment exhaust:

- To the extent that equipment is available and cost effective, the campus shall encourage contractors to use alternate fuels and retrofit existing engines in construction equipment.
- Minimize idling time to a maximum of 5 minutes when construction equipment is not in use.
- To the extent practicable, manage operation of heavy-duty equipment to reduce emissions.
- To the extent practicable, employ construction management techniques such as timing construction to occur outside the ozone season of May through October, or scheduling equipment use to limit unnecessary concurrent operation.

2003 LRDP EIR Mitigation Measures

AIR QUALITY

4.3-6	Implement LRDP Mitigation 4.3-1(a-c).
4.3-8	EPA and CARB are expected to continue the development and implement programs to reduce air toxics, and UC Davis will continue its efforts in this area.

7.3.4 Environmental Checklist and Discussion

AIR QUALITY Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☑	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☑	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☑	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☑	☐

a,b,c,d)

Construction

The 2003 LRDP EIR found that emissions of criteria pollutants from construction activities under the 2003 LRDP could exceed YSAQMD thresholds (LRDP Impact 4.3-3). The state 24-hour PM_{10} standards could be violated when multiple construction projects (especially projects that involve ongoing grading or excavation activities) occur simultaneously in the same area. Construction of the Project would result in a temporary addition of pollutants to the local air shed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling demolition debris and excavated earth materials and from construction workers travelling to and from the site. Existing buildings that may contain asbestos would also be demolished. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions. Therefore, an increment of day-to-day variability exists.

Pollutant emissions associated with construction of the Project were quantified using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2. Default values provided by the program were used where detailed project information was not available. A detailed depiction of the construction schedule—including information regarding phasing, equipment utilized during each phase, haul trucks, vendor trucks, and worker vehicles—is contained in the CalEEMod outputs, provided in Appendix B.

It is anticipated that demolition of the existing Emerson Hall dormitory would occur after the construction of Webster Hall. Demolition of the existing dormitory would begin approximately September 2019 through January 2019 and building construction for the Project would occur thereafter, from January 2020 through April 2022. For purposes of estimating Project emissions, and based on information provided by UC Davis, it is assumed that construction activity would occur continuously and would not be phased. The analysis contained herein is based on the following assumptions (duration of phases is approximate):

- Demolition: 90 days (September 2019 – January 2020)
- Site Preparation: 2 days (January 2020)
- Grading: 4 days (January 2020)
- Building construction: 550 days (January 2020 – February 2022)
- Paving: 10 days (February 2022 – March 2022)
- Architectural coating: 20 days (March 2022 – April 2022)

CalEEMod was used to quantify emissions of ozone precursors (ROG and NOx) and PM_{10} emissions from off-road equipment, haul trucks associated with demolition, grading, on-road worker vehicle emissions, and vendor delivery trips. Annual and predicted worst-case day construction emissions for each of the construction years are presented in **Table 7.3-1, Estimated Construction Emissions,** and compared to the YSAQMD significance thresholds.

Table 7.3-1
Estimated Construction Emissions

Year	ROG	NO_x	PM_{10}
	tons per year		*pounds per day*
2019	0.10	1.06	3.01
2020	0.37	2.46	6.68
2021	0.33	2.26	2.43
2022	1.18	0.34	2.34
Maximum Construction Emissions	**1.18**	**2.46**	**6.68**
Pollutant Threshold	*10*	*10*	*80*
Threshold Exceeded?	**No**	**No**	**No**

Notes: See Appendix B for detailed results.
PM_{10} values shown are the maximum summer or winter daily emissions results from CalEEMod.
These estimates reflect implementation of YSAQMD fugitive dust mitigation measure requiring the construction site to be watered twice daily. YSAQMD has adopted construction thresholds for ROG, NO_x, and PM_{10}.
ROG = reactive organic gases; NO_x = oxides of nitrogen; PM_{10} = coarse particulate matter

As shown in Table 7.3-1, annual ROG and NO_x emissions and daily PM_{10} construction emissions would not exceed the YSAQMD significance thresholds during construction. Therefore, construction criteria air pollutant impacts of the Project would be less than significant and no additional mitigation measures are required.

The Project site is located near student residences, specifically Thoreau Hall and Webster Hall to the south; Webster Hall will be completed early 2019 prior to the commencement of the Project. These student housing residences are within 200 feet of the Project site boundary and would be considered sensitive receptors. However, construction activities for the Project would not result in the potential for significant cumulative air quality impacts on nearby sensitive receptors due to construction emissions not exceeding the ROG, NO_x, and PM_{10} significance thresholds and due to construction activities being short-term, occurring within an approximate 3-year period spanning September 2019 through April 2022. In addition, no other construction activities are planned within the Project area. The 2003 LRDP EIR found that impacts of cumulative emissions would be significant and unavoidable (LRDP EIR 4.3-3). Given the analysis herein, the Project's contribution to this significant cumulative impact would not be cumulatively considerable. The cumulative impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5), conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis. Additionally, no new project-level mitigation measures have been identified that would further reduce the impact.

Operation

The Project is a student housing development, with utilities such as heating, cooling and power provided through the on-campus utility system. The Project does not include stationary sources that would emit air pollutants such as large boilers or emergency generators. Notably, UC Davis does not permit personal vehicles at this student housing location. Consequently, emissions from mobile sources would be negligible, as no substantial vehicular traffic would result from operation of the Project. Based on this information, the Project's estimated operational emissions are provided in **Table 7.3-2, Estimated Operational Emissions**.

Table 7.3-2
Estimated Operational Emissions

Source	ROG	NO_x	PM_{10}
	tons per year		*pounds per day*
Existing			
Area	0.63	0.02	0.11
Energy	0.02	0.17	0.07
Total Existing	**0.65**	**0.19**	**0.18**
Proposed Project			
Area	0.88	0.02	0.13
Energy	0.02	0.15	0.07
Total Proposed Project	**0.90**	**0.17**	**0.20**
Net Change (Project minus Existing)	0.25	(0.02)	0.02
Pollutant Threshold	*10*	*10*	*80*
Threshold Exceeded?	**No**	**No**	**No**

Notes: See Appendix B for detailed results.
PM_{10} values shown are the maximum summer or winter daily emissions results from CalEEMod.
These estimates reflect implementation of a 20% reduction in water use (UC Davis Drought Response Plan) and 75% waste diverted from landfills (AB 341). The number in parentheses corresponds with a reduction in emissions.
ROG = reactive organic gases; NO_x = oxides of nitrogen; PM_{10} = coarse particulate matter

As shown in Table 7.3-2, ROG, NO_x, and PM_{10} net operational emissions for the Project would not exceed the YSAQMD thresholds of significance. The 2003 LRDP EIR found that operational emissions from campus development under the 2003 LRDP could substantially contribute to a violation of ambient state and federal air quality standards or hinder the attainment of the regional air quality plan (LRDP Impact 4.3-1). UC Davis is located in an area that is in nonattainment of state O_3 and PM_{10} standards. As a part of the Sacramento Federal Nonattainment area, the YSAQMD adopted the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2013 SIP Revisions)* (YSAQMD et al.

2013), which addresses attainment of the federal 8-hour ozone standard while the *Draft Triennial Assessment and Plan Update* (YSAQMD 2016), which addresses attainment of the California 1-hour and 8-hour ozone standards. These applicable air quality plans are intended to implement regulations for ozone emissions and attainment of the air quality standards.

LRDP Mitigation Measures 4.3-1 (a) and (b) encourage alternative transportation and no- or low-emission building designs and operations in order to reduce daily emissions from campus vehicular and stationary sources. LRDP Mitigation Measure 4.3-1(c) would ensure that UC Davis will coordinate with the YSAQMD during the update of the Clean Air Plan and other applicable air quality planning efforts. However, since the 2003 LRDP resulted in exceedance of O_3 standards even with mitigation, the 2003 LRDP could potentially conflict with or obstruct implementation of the regional air quality plan. The LRDP impact is therefore considered significant and unavoidable. The Project would replace the existing dormitory with a new dormitory, would comply with the UC Policy on Sustainable Practices by achieving a minimum certification of at least LEED Gold, would not result in new personal vehicles at on-campus freshman housing, and operational emissions would not exceed the YSAQMD thresholds of significance. Therefore, the Project would not substantially contribute to this significant LRDP impact and the Project impact is less than significant. The significant LRDP impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Toxic Air Contaminants

The Project would not include any substantial sources of TACs. Health Risk Assessment (HRA) calculations performed as part of the 2003 LRDP EIR predicted that the cancer risk from campus operations through academic year 2015–2016 will be below 10 in one million for both the off-campus and on-campus Maximally Exposed Individual which assumed a 70-year exposure period. The non-cancer health risk was calculated to be below 1.0 on the hazard index. Therefore, the 2003 LRDP EIR concluded that development under the 2003 LRDP would not exceed either health risk standard, and the impact associated with TAC generation would be less than significant.

Cumulative Development

Impact 4.3-6 of the 2003 LRDP EIR found that implementation of the 2003 LRDP, in conjunction with other regional development, would contribute to emissions of criteria pollutants for which the region is nonattainment with respect to ambient air quality standards. The YSAQMD has accounted for a certain amount of regional growth within both the *2013 SIP Revisions* and the *Draft Triennial Assessment and Plan Update*; both of which account for future growth of UC Davis. The Project would be required to comply with LRDP Mitigation Measures 4.3-1 (a) through (c), however, because the YSAQMD remains a nonattainment area for O_3, cumulative impacts would be considered significant and unavoidable. The Project is within the development assumptions analyzed in the 2003 LRDP EIR (see Section 4.5). Because the Project would not increase campus population or regional population beyond levels already anticipated under the LRDP, the Project would not result in new or substantially worse impacts related to emissions of criteria pollutants. As discussed previously, the Project would not result in construction emissions of ROG, NO_x, or PM_{10} that would exceed YSAQMD's thresholds of significance for construction emissions. Further, the Project would not emit operational emissions that would exceed YSAQMD's thresholds. Therefore, the Project's contribution to this significant cumulative impact would not be cumulatively considerable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR, no conditions have changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Impact 4.3-8 of the 2003 LRDP EIR evaluated whether regional growth could result in an increase in TACs if compensating technological improvements are not implemented. The analysis concluded that because the EPA and CARB were expected to continue the development and implementation of programs to reduce air toxics, and UC Davis would continue its efforts in this area, the impact would be less than significant. The Project is within the scope and development assumptions of the 2003 LRDP and would not result in any new or substantially worse impacts related to TACs. This impact was adequately analyzed in the 2003 LRDP EIR. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR, no conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

e) The 2003 LRDP EIR concluded that odor impacts associated with development under the 2003 LRDP would be less than significant. During construction, the various diesel-powered vehicles and equipment used on site would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the Project's site boundaries. Typical land uses identified as sources of objectionable odors include landfills, transfer stations, sewage treatment plants, wastewater pump stations, composting facilities, feed lots, coffee roasters, asphalt batch plants, and rendering plants. The Project does not include any of these types of facilities. Therefore, the Project would not have the potential to expose persons to substantial sources of objectionable odors and impacts would be less than significant.

7.4 BIOLOGICAL RESOURCES

7.4.1 Background

Section 4.4 of the 2003 LRDP EIR addresses the effects of campus growth under the 2003 LRDP on biological resources. The following discussion summarizes information presented in the 'Setting' subsection of Section 4.4 of the 2003 LRDP EIR and provides updated information, as relevant.

Environmental Setting

The 5,300-acre campus is located in a region that is composed primarily of urban areas and agricultural lands that include remnant riparian areas (Figure 1). Habitat types on the campus can be classified as Agricultural Lands (including Cropland/Pasture, and Orchard/Vineyard), Valley Foothill Riparian Woodland, Ruderal/Annual Grassland, Open Water Ponds, Riverine, and Urban Landscaping/Developed.

The Project site is located off-campus in the City of Davis, north of the UC Davis central campus (see Figure 2, Project Site). Emerson Hall is one of three residential buildings that, along with a dining commons, comprise the Cuarto Residence Hall Area. The Cuarto Area is arranged around Oxford Circle, located north of Russell Boulevard, between Sycamore Lane and Highway 113.

The 2003 LRDP EIR considers special-status species to be those taxa that are: (1) listed as threatened or endangered under either the California or Federal Endangered Species Acts; (2) candidates for either state or federal listing; (3) species afforded protection under the Fish and Game Code of California; (4) federal and California Department of Fish and Game (CDFG) "Species of Special Concern"; (5) CDFG "Species of Special Concern" highest and second priority lists; or (6) California Native Plant Society (CNPS) List 1-3 plants.

Project Site

Habitat

The Project area is classified as Urban Landscaping/Developed. Urban habitat as defined in the LRDP EIR includes landscaped areas that are vegetated with trees, shrubs, and maintained grassy areas; however, Emerson Hall is located within a developed and paved lot that has minimal landscaping (see **Figure 5, Site Photos**). One of the enclosed courtyards within the existing Emerson Hall includes a manicured lawn area.

The landscaped areas surrounding Emerson Hall, with their abundance of mature trees, provide wildlife habitat values (food and cover) for many species of birds (including Swainson's hawk). Several resident and migratory avian species are known to nest in the trees and shrubs within the central campus and surrounding areas.

Special-Status Species

Swainson's Hawk. Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species under the California Endangered Species Act and is also fully protected against take pursuant to Section 3503.5 of the Fish and Game Code of California. Swainson's hawk is a relatively large bird of prey that typically nests in large trees in riparian corridors as well as isolated trees remaining in or adjacent to agricultural fields in the Central Valley. However, in the City of Davis, and on the central campus, these hawks also nest in the large trees among buildings, roads, and dwellings.

This species forages in open grassland habitats and has adjusted to foraging in certain types of agricultural lands (including alfalfa, tomatoes and other grain crops). The value of foraging habitat can be affected by a variety of characteristics, including density and availability of prey, proximity to anthropogenic features that could cause disturbance, and distance to nesting territories. Published information indicates these raptors typically forage within a 10-mile radius of nest sites but may range up to 18 miles from a nest site in search of suitable foraging habitat and available prey. Formal studies have shown that Swainson's hawks will spend the majority of foraging time in close proximity to the nest site when high quality foraging habitat (measured by the abundance and availability of prey) is present.

Occurrences of Swainson's hawk in and around the campus are well documented. UC Davis conducted yearly surveys for Swainson's hawk nests on the campus and within one half mile of the campus from 1991 through 1998. Project-specific surveys have been conducted annually since 1998. The results of these surveys documented approximately 20 active nests per year and a total of approximately 50 total nests within one-half mile of the campus over the decade. Most of the Swainson's hawk nests are located in the Putah Creek riparian corridor. Several Swainson's hawks have nested within ½-mile of the Project site.

Trees

A biological reconnaissance survey of the Project site was conducted and all trees were evaluated that have the potential to be removed during the Project. In accordance with the campus practice for identifying trees to preserve during a development or redevelopment project and in compliance with LRDP Mitigation 4.4-11, these trees were evaluated for their value as "heritage" or "specimen" trees. The trees identified during the survey were all ornamental, and are not considered heritage or specimen trees and are not otherwise protected by UC Davis or by City ordinance.

7.4.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a biological resources impact significant if growth under the 2003 LRDP would:

- Result in a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS).
- Result in the "take" (defined as kill, harm, or harass) of any listed threatened or endangered species or the habitat of such species.
- Result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS.
- Result in 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, or coastal wetland) through direct removal, filling, hydrological interruption, or other means.
- 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.
- Conflict with any applicable local policies protecting biological resources such as a tree protection policy or ordinance.

An additional standard from the CEQA Guidelines Appendix G Environmental Checklist ("f" in the checklist in Section 7.4.5) was found not applicable to campus growth under the 2003 LRDP.

Looking east along the southern side of Emerson Hall

Looking south along the western side of Emerson Hall

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Looking north along the southern side of Emerson Hall

Looking west along the western side of Emerson Hall

FIGURE 5B

Site Photos

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7.4.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on biological resources are evaluated in Section 4.4 of the 2003 LRDP EIR. The Project is within the scope of analysis in the 2003 LRDP EIR and the significant and potentially significant biological resources impacts identified in the 2003 LRDP EIR that are relevant to the Project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. Mitigation measures are relevant to reduce the magnitude of cumulative LRDP Impact 4.4-11, but this impact is identified as significant and unavoidable because the feasibility and/or implementation of mitigation falls within other jurisdictions and therefore cannot be guaranteed by the University of California.

2003 LRDP EIR Impacts BIOLOGICAL RESOURCES		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.4-1	Development allowed under the 2003 LRDP could result in the loss of special-status plant species or species that may be added to the special-status plant list in the future.	PS	LS
4.4-2	Development allowed under the 2003 LRDP would result in the conversion of approximately 550 acres of Agricultural Land and Ruderal/Annual Grassland habitat to campus-related development which would result in the loss of general wildlife habitat for resident and migratory species, including foraging habitat for the Swainson's hawk.	S	LS
4.4-3	Development allowed under the 2003 LRDP would result in the conversion of approximately 65 acres of Agricultural Land and Ruderal/Annual Grassland habitat suitable for nesting burrowing owls to campus-related development.	PS	LS
4.4-4	Development allowed under the 2003 LRDP could result in the failure of nesting efforts by nesting raptors, including Swainson's hawks or other birds of prey.	PS	LS
4.4-5	Development allowed under the 2003 LRDP would result in the loss of active nest sites for Swainson's hawk.	PS	LS
4.4-6	Development allowed under the 2003 LRDP would result in the loss of potential habitat for the VELB.	PS	LS
4.4-7	Development allowed under the 2003 LRDP could result in the loss of potential habitat for the northwestern pond turtle from drainage improvement projects, bank stabilization measures and landscape maintenance activities within Riverine habitat along Putah Creek and the Arboretum Waterway.	PS	LS
4.4-11	Development under the 2003 LRDP could result in the removal of trees recognized to meet the campus' standards for important trees, including: a. Heritage Trees: Healthy valley oak trees with trunk diameters of 33 inches or greater at a height of 54 inches from the ground. b. Specimen Trees: Healthy trees or stands of trees that are of high value to the campus due to their size, species, extraordinary educational and research value, and/or other exceptional local importance.	LS	LS
4.4-12	Development allowed under the 2003 LRDP would contribute 550 acres to the cumulative loss in the region of over 1,500 acres of Agricultural Land and Ruderal/Annual Grassland habitat for resident and migratory wildlife species including Swainson's hawks and burrowing owls.	S	SU

2003 LRDP EIR Impacts BIOLOGICAL RESOURCES		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.4-13	Development allowed under the 2003 LRDP could contribute to the cumulative loss in the region of wetland and riparian habitat for resident and migratory wildlife species and special status plants.	S	SU
4.4-14	Development allowed under the 2003 LRDP could contribute to the cumulative loss of valley elderberry beetle habitat.	S	SU
4.4-15	Development of the 2003 LRDP would not contribute to a cumulative adverse impact on special status fish species.	LS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the Project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the Project description and will not be readopted in this Initial Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

2003 LRDP EIR Mitigation Measures BIOLOGICAL RESOURCES	
4.4-1(a)	During the project planning phase, the campus shall conduct a rare plant survey if the site is previously undeveloped and is in a valley-foothill riparian, open water pond, riverine, wetland or ruderal/annual grassland or habitat. Surveys shall be conducted by qualified biologists in accordance with the most current CDFG/USFWS guidelines or protocols and shall be conducted during the blooming period of the plant species with potential to occur in the area, as listed in Table 4.4-2 [of the 2003 LRDP EIR]. If these surveys reveal no occurrences of any species, then no further mitigation would be required.
4.4-1(b)	Should surveys determine that special-status plant species are present, measures will be taken to avoid the plants and the associated habitat necessary for long-term maintenance of the population. If avoidance is not feasible the campus will provide off-site compensation at a 1:1 ratio. Off-site compensation will include preservation of existing populations at other sites and/or enhancement of the affected species. The campus will preserve either an equal number of the affected plants or an equal area of the affected species habitat. The campus shall also develop and fund the implementation of a plan to manage and monitor the preserve to ensure the long-term survival of the preserved population.
4.4-4(a)	The campus shall conduct a pre-construction survey of trees on and adjacent to a project site during the raptor breeding season (approximately March 1 to August 31). Additionally, the campus shall conduct surveys within a ½-mile radius of the site to determine the presence or absence of any nesting Swainson's hawks. The surveys shall be conducted by a qualified biologist during the same calendar year that the proposed activity is planned to begin to determine if any nesting birds-of-prey would be affected. If phased construction procedures are planned for the proposed activity, the results of the above survey shall be valid only for the season when it is conducted. If any Swainson's hawks are nesting within a one-half-mile radius of the project site or if other raptors are nesting in, on or adjacent to the project site, a qualified biologist shall determine the potential for disturbance to nesting raptors, including Swainson's hawks. If the biologist determines that there is a significant potential for disturbance, the campus shall implement feasible changes in the construction schedule or make other appropriate adjustments to the project in response to the specific circumstances. If feasible project changes are not readily identifiable, the campus will consult with CDFG to determine what actions should be taken to protect the nesting efforts. If, after five years, a previously recorded nest site remains unoccupied by a Swainson's hawk, it will no longer be considered as a Swainson's hawk nest site subject to this mitigation.
4.4-4(b)	The campus shall continue to conduct annual surveys to determine the location of nesting Swainson's hawks and other birds of prey on the campus outside the Putah Creek corridor. If nesting Swainson's hawks are found during the survey at a previously unknown location within one-half mile of a project site and/or at a

location closer to the project or more visually exposed to the project site than a nearby previously documented site, a qualified biologist shall, prior to project construction, determine the potential for disturbance to nesting Swainson's hawks. If the biologist determines that there is a significant potential for disturbance, the campus shall implement feasible changes in the construction schedule or make other appropriate adjustments to the project in response to the specific circumstances (e.g., relocating noisy equipment or creating temporary sound barriers).

The implementation of LRDP Mitigations 4.4-4(a) and (b) shall be conducted under the supervision of a biologist whose qualifications include:

- A bachelor's degree in biology or a related field;
- Two years of field experience related to nesting raptors; and
- Prior construction monitoring experience.

Further:

- All decisions of the qualified biologist shall be made in consultation with the California Department of Fish and Game;
- Monitoring shall be conducted for a sufficient time (minimum of 3 consecutive days following the initiation of construction) to verify that the nesting pair does not exhibit significant adverse reaction to construction activities (i.e., changes in behavioral patterns, reactions to construction noise, etc.); and
- Nest site monitoring will continue for a minimum of once a week through the nesting cycle at that nest.

4.4-5 Mitigation 4.4-4(a) and (b) will be implemented, including pre-construction survey of trees on and adjacent to a project site during the raptor breeding season (approximately March 1 to August 31). If a Swainson's hawk nest tree is present, the tree will be removed outside the nesting season (March-May).

4.4-8(a) During the project design phase, the campus shall conduct a wetlands delineation of the project site if wetlands are potentially present. The wetland delineation shall be verified by the ACOE. Should no wetland habitats or natural drainages be delineated on the site then no further mitigation shall be required. However, if any jurisdictional wetland habitats or natural drainages are delineated on a project site, then LRDP Mitigation 4.4-8(b) shall be required.

4.4-8(b) For projects that involve the fill of jurisdictional wetlands, the campus shall implement the following mitigation program that will ensure no net loss of wetland functions and values. To the extent feasible, the campus will avoid filling wetlands by redesigning the project to promote environmentally sensitive siting and design. If avoidance is not feasible, the campus shall minimize the fill acreage. If neither of these options is feasible, the wetlands will be mitigated for at a 3:1 ratio. This ratio will include both creation and preservation, with creation equaling at least a 1:1 ratio. To ensure no net loss of wetlands, the mitigation should include wetland enhancement as well. This would include monitoring, cleanup, and maintenance of preserved wetland habitats within and adjacent to the campus, as necessary.

4.4-8(c) The campus shall obtain the necessary ACOE, CDFG, and RWQCB permits prior to filling or other adverse modifications of any verified jurisdictional water of the U.S., or alteration, filling or modification of the channel, bed or bank of Putah Creek, South Fork of Putah Creek, Arboretum Waterway or any other natural drainage regulated under Section 1600 of the CDFG code.

4.4-11 Before a project is approved under the 2003 LRDP, the campus will perform a tree survey of the project site. Grounds, the Office of Resource Management and Planning, and the Office of Architects and Engineers will provide input about tree classifications and will modify project design to avoid important trees if feasible. If a project cannot avoid an important tree, the following will apply:

a. If a project would necessitate removal of a Heritage Tree, no mitigation would be available to fully mitigate the impact, and the impact would be significant and unavoidable. However, implementation of Mitigation 4.4-2 would restore Valley Foothill Riparian Woodland habitat at Russell Ranch, and plantings in this area would include valley oaks.

b. If a project would necessitate removal of a Specimen Tree, the project would relocate the tree if feasible, or would replace the tree with the same species or species of comparable value (relocation or replacement should occur within the project area if feasible). This would reduce the impact to a less than significant level.

7.4.4 Environmental Checklist and Discussion

BIOLOGICAL RESOURCES Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☑	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☐	☑
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?	☐	☐	☐	☐	☑
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☐	☑
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☑	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☐	☑

a) Potential impacts to special status plants and wildlife are discussed below.

Plants

The 2003 LRDP EIR found that development under the 2003 LRDP could result in the loss of special status plant species (LRDP Impact 4.4-1). However, the analysis in the 2003 LRDP EIR concluded that urban habitat at UC Davis such as the Project site (which is either under buildings and roadways or under landscaping) has no potential to include special status plant species. Accordingly, the Project would have no potential to affect special status plant species and therefore would have no impact on such species. See item (e) below for details related to removal of urban landscape trees.

Wildlife

The 2003 LRDP EIR found that development under the 2003 LRDP could affect several wildlife species, including the burrowing owl, Swainson's hawk, the valley elderberry longhorn beetle (VELB), the western pond turtle, and special-status fish species (LRDP Impacts 4.4-2 through 4.4-7 and 4.4-12 through 4.4-14). Under the Project, construction would be limited to a previously developed site just north of the central campus. The Project would redevelop the existing Emerson Hall located within a student housing area that is surrounded by buildings, walkways, bicycle parking, and limited horticultural landscaping. The Project site does not contain any riparian areas, ruderal areas, and agricultural lands that were identified in Section 4.4 of the 2003 LRDP EIR as having potential for providing suitable habitat. As no suitable habitat is present for the burrowing owl, VELB, western pond turtle or special status fish species on the site or in its vicinity, there is no potential for impacts to these species or their habitat, as a result of Project implementation. According to the 2003 LRDP EIR there is low to no potential to encounter special status bat species on the campus. In addition, Emerson Hall has been in continual use with no report of bat presence.

Swainson's hawks, however, could possibly nest in trees on or adjacent to the Project site. Since the early 1990s, Swainson's hawks have not nested in any trees on the site. However, several Swainson's hawks have nested within ½-mile of the Project site. All except one nesting attempt have been over ¼-mile from the site, screened from the Project site by buildings and/or vegetation, and in areas where nesting birds have habituated to high levels of human activity. In 2001, a pair of Swainson's hawks nested approximately 1,000 feet northeast of the Project site in a pine tree within the courtyard of the Surge Buildings. Therefore, it is possible that Swainson's hawks could establish nests in the area before construction starts. In addition, other non-special-status birds could nest in trees on or adjacent to the site. Implementation of LRDP Mitigation Measures 4.4-4(a)-(b) and 4.4-5 requires actions to ensure that active nests are not disturbed. Implementation of LRDP Mitigation Measures 4.4-4(a)-(b) and 4.4-5 would reduce potential Project impacts to nesting Swainson's hawks or other nesting birds to less than significant. This impact was adequately addressed in the 2003 LRDP EIR.

Impact 4.4-12 of the 2003 LRDP EIR concluded that growth in the City of Davis and Yolo and Solano Counties would result in a significant and unavoidable cumulative loss of habitat for resident and migratory species. The continued loss of these habitat types around the campus and the City of Davis also would contribute to the regional loss of foraging habitat for the Swainson's hawks that may contribute to this species' decline in California. The burrowing owl also would be subject to a substantial loss of habitat as development occurs in the region. While Yolo County's Natural Communities Conservation Plan and Solano County's HCP would address impacts to biological resources and compensate for losses, UC Davis will compensate for habitat loss on campus by developing and implementing habitat mitigation on the UC Davis campus. The campus will therefore not contribute to this cumulative impact. However, the regional conversion of habitat around the campus, the City of Davis and throughout Yolo and Solano Counties to urban development is considered a substantial reduction in the acres of habitat for native wildlife. Implementation of the Yolo County NCCP and Solano County HCP may reduce these effects to a less-than-significant level. However, UC Davis cannot guarantee implementation; therefore, the impact remains significant and unavoidable.

The Project would include demolition of the existing Emerson Hall building and replacement with a new 180,000 gsf residence hall. As discussed previously, the Project would not affect suitable habitat for special-status species and therefore the Project's contribution to this significant cumulative impact would not be cumulatively considerable. The significant cumulative impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5), conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

b,c) The Project site has one existing three-story building and a small amount of manicured landscaping. The site is surrounded by pavement and no natural habitat exists on the site. There are no riparian or wetland areas on the Project site. No impact would occur.

Impact 4.4-13 of the 2003 LRDP EIR concluded that growth in the City of Davis and other cities of Yolo and Solano Counties could convert wetland and riparian habitat to urban uses, and that there could be a cumulative loss of habitat for resident and migratory wildlife species and special status plants. The most significant wetland features (waters of the U.S.) on the campus are the Putah Creek and South Fork Putah Creek drainages, and the Arboretum Waterway. The only modifications of Putah Creek or South Fork of Putah Creek planned under the 2003 LRDP were drainage improvements and maintenance. The Arboretum Waterway may be subject to disturbance from drainage improvement projects, bank stabilization measures and landscape maintenance activities. UC Davis will compensate for habitat loss on campus by implementing mitigation measures 4.4-1(a)-(b) to mitigate for impacts to special-status plants 4.4-8(a)-(c) ensure no net loss of wetland functions and values. No campus mitigation is required for impacts to migratory corridors. Implementation of the Yolo County NCCP and Solano County HCP may reduce these effects to a less-than-significant level. However, UC Davis cannot guarantee implementation; therefore, the cumulative impact remains significant and unavoidable.

As described previously, there are no riparian or wetland areas on the Project site. Therefore, the Project would not contribute to the cumulative impact related to loss of riparian or wetland features. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5), conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

d) The Putah Creek corridor, which is the southern boundary of the campus, is the principal corridor for the movement of native resident and migratory fish and wildlife through the UC Davis campus. It is the regional connection between the hills in western Yolo County and the Sacramento River. The Project site is 1.1 mile north of the Putah Creek corridor. Therefore, the Project would not 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. No impact would occur.

Impact 4.4-15 of the 2003 LRDP EIR concluded that development under the 2003 LRDP, in conjunction with other development in the region, would not result in significant cumulative impacts on special status fish species. As discussed previously, the Project site is approximately 1.1 mile north of the Putah Creek corridor. Therefore, the Project would not interfere with the movement of any native resident or migratory fish or wildlife species. Because the Project is within the scope of development under the 2003 LRDP and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the Project would not alter the conclusions of this previous analysis.

e) The 2003 LRDP EIR evaluated the impact associated with the removal of significant trees in conjunction with the development of new buildings and facilities (LRDP Impact 4.4-11) and included Mitigation Measure 4.4-11 which requires that all project sites with trees be surveyed and the design of the Project be modified if the Project requires the removal of a heritage tree. The LRDP EIR concluded that in all instances, the removal of heritage trees would not be avoided by project design. The EIR therefore concluded that the implementation of LRDP Mitigation Measure 4.4-11 would not reduce the impact to less than significant, and LRDP Impact 4.4-11 was determined to be significant and unavoidable. Pursuant to LRDP Mitigation Measure 4.4-11, the campus performs a tree survey of a Project site prior to project approval, and modifies the Project design to the extent feasible to avoid tree removal or provide additional mitigation if removal of heritage or specimen trees cannot be avoided. The trees surveyed on the Project site that are slated for removal are ornamental species and are therefore not considered a “Specimen” or “Heritage” tree. No impact would occur.

f) The campus does not fall within the boundaries of, nor is it adjacent to, an adopted regional Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP). The campus has implemented two low effects HCPs for Valley Elderberry Longhorn Beetle at Russell Ranch. The Project is not located at Russell Ranch. Therefore, the Project would not conflict with an adopted HCP or NCCP.

7.5 CULTURAL RESOURCES

7.5.1 Background

Section 4.5 of the 2003 LRDP EIR addresses the effects of campus growth under the 2003 LRDP on cultural resources. Consistent with the LRDP EIR (Mitigation Measure 4.5-1(c)), a Cultural Resources Report (CRR) was prepared for the Project site by Dudek in December 2017. This report is included as **Appendix C** to this Initial Study. The purpose of the CRR is to evaluate the Project site for archeological or historical resources in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines. The Project site was evaluated in consideration of the California Register of Historical Resources (CRHR) and City of Davis Historic Resources Inventory eligibility and integrity requirements and National Register of Historic Places (NRHP) and California Historical Landmark (CHL) criteria and integrity requirements. The CRR included a California Historical Information System (CHRIS) records search, archival research, a pedestrian survey of the Project area, and built-environment documentation. The following discussion summarizes information presented in the in the CRR prepared for Emerson Hall and the ‘Setting’ subsection of Section 4.5 of the 2003 LRDP EIR.

Environmental Setting

Cultural resources on campus and in the surrounding area include prehistoric and historic resources. Prehistoric resources are those sites and artifacts associated with the indigenous, non-Euroamerican population, generally dating prior to contact with people of European descent. Historic resources include structures, features, artifacts, and sites that date from Euroamerican settlement of the region.

Dudek requested a CHRIS records search from the Northwest Information Center, which houses cultural resources records for Yolo County. Dudek received the results on November 15, 2017. Twenty-one previously conducted studies were identified within a 0.5-mile records search radius of the Project site. None of these studies overlap the Project site. The CHRIS records search results indicated that no archeological or built-environment resources have been previously recorded within the Project site. However, five resources have been recorded within a 0.5-mile radius of the Project site. The closest resource to the Project area is the historic Lincoln Highway District, located approximately 250 feet to the south of the Project area.

The CHRIS records search results indicated that no archeological or built-environment resources have been previously recorded within the Project site. The historical significance evaluation for the existing Emerson Hall building indicates that the property is not eligible for inclusion in the NRHP, CRHR, CHL or local register due to a lack of significant historical associations and compromised integrity and would not be considered a historic resource under PRC Section 5024.5.

Dudek reviewed multiple files from the UC Davis Special Collections, UC Davis Facilities Management Department, City of Davis (City), Yolo County Assessor’s Office, Yolo County Recorder, Sacramento Public Library and Center for Sacramento History concerning Emerson Hall and the development of the campus and City. Information from these sources was used in preparation of the historic context and building development sections of the CRR. Historic aerial photographs of the Project area, ranging from 1968 to 2012, were also reviewed.

Nicholas Hanten, Dudek cultural resources specialist, conducted a pedestrian survey of the Project area on November 14, 2017. During the survey, Mr. Hanten walked all accessible portions of Emerson Hall and documented the building with detailed notes and photographs, specifically noting character-defining features, important spatial relationships, and any observable alterations to the building.

Archaeological Resources

The campus and surrounding area lies in the ethnographic territory of the Patwin. Since 1991, extensive archaeological investigations (survey, testing, monitoring, and/or excavation) have been conducted on campus in conjunction with the development of campus projects (Nadolski 2003, as cited in UC Davis 2003). Patwin sites, including burials, have been identified at several locations on the central campus. Areas within 800 feet of the banks of the historic channel of Putah Creek and its tributaries and slough channels, and within 800 feet of specific known archaeological sites, have been identified as archaeologically sensitive zones on the campus. Within the City of Davis, studies for cultural and historic resources were completed at nine study sites of which resources were only discovered on two sites, Covell Center and Oeste Campus. Covell Center and Oeste Campus are located 1.7 miles northeast and 1.3 miles northwest from the Project site, respectively.

Historic Resources

The earliest direct historic contacts in the Davis area probably occurred during 1806 to 1808. Farming on a large scale began in the Davis area in the 1850s. A “university farm” was established at Davis in 1906, classes began in 1909, and Davis became a general University of California campus in 1959. Temporary Building 9, which has been an art studio for decades, was recently included in the National Register of Historic Places and the California Register of Historical Resources. No other properties within the campus are listed in these registers. Six properties on or near the campus have been recorded with the California Inventory of Historic Resources. Historic architectural features typically must be at least 50 years of age to be considered for listing on the California Register of Historical Resources (CRHR). The City of Davis designates the avenue of trees along Russell Boulevard west of Arthur Street as a landmark.

Project Site

The Project site is located north of the historic channel of Putah Creek and outside of the Zone of Cultural Sensitivity around Putah Creek. The Project site is located approximately 0.3 mile east of Arthur Street and the City designated landmark avenue of trees. The site was significantly excavated and graded with the prior construction of Emerson Hall dormitory building. The existing Emerson Hall building that is proposed for demolition was constructed in 1967.

Consultation

Assembly Bill (AB) 52 establishes a consultation process, effective July 1, 2015, between California public agencies and California Native American Tribes. AB 52 further establishes a category of resources known as tribal cultural resources. At the outset of the CEQA process, public agencies must notify tribes that have requested such notice, of any project that has the potential to impact a tribal cultural resource. UC Davis has not received a request for notification from any of the local tribes. UC Davis notifies the Yocha Dehe of all projects, and provides an update two or three times per year. No consultation request regarding this Project has been made.

7.5.2 2003 LRDP EIR Standards of Significance

In addition to the following archaeological and historical standards of significance identified in the 2003 LRDP EIR, an additional standard from the CEQA Guidelines Appendix G Environmental Checklist ("c" in the checklist in Section 7.5.4) was found not applicable to campus growth under the 2003 LRDP.

Archaeological Resources

The 2003 LRDP EIR considers an impact on archaeological resources significant if growth under the 2003 LRDP would:

- Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines, Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.

A "unique archaeological resource" is defined under CEQA through Public Resources Code (PRC) Section 21083.2(g). A unique archaeological resource implies an archaeological artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it meets one of the following criteria:

- The archaeological artifact, object, or site contains information needed to answer important scientific questions and there is a demonstrable public interest in that information, or
- The archaeological artifact, object, or site has a special and particular quality, such as being the oldest of its type or the best available example of its type, or
- The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person.

For a resource to qualify as a unique archaeological resource, the agency must determine that there is a high probability that the resource meets one of these criteria without merely adding to the current body of knowledge (PRC Section 21083.2(g)). An archaeological artifact, object, or site that does not meet the above criteria is a nonunique archaeological resource (PRC Section 21083.2(h)). An impact on a nonunique resource is not a significant environmental impact under CEQA (CEQA Guidelines Section 15064.5(c)(4)). If an archaeological resource qualifies as a historical resource under CRHR or other criteria, then the resource is treated as a historical resource for the purposes of CEQA (CEQA Guidelines Section 15064.5(c)(2)).

Section 15064.5 of the CEQA Guidelines assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under PRC Section 5097.98. California Health and Safety Code Section 7050.5(b) prohibits disturbance of human remains uncovered by excavation until the Coroner has made a finding relative to PRC Section 5097 procedures.

Historical Resources

The 2003 LRDP EIR considers an impact on historic resources significant if growth under the 2003 LRDP would:

- Cause a significant adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.

The standards of significance for historical resources are based on Appendix G and Section 15064.5 of the CEQA Guidelines. Accordingly, historical resources include resources listed in, or determined to be eligible for listing in, the CRHR; resources included in a qualifying local register (such as the City of Davis Register of Historic Resources); and resources that the lead agency determines to meet the criteria for listing in the CRHR. These criteria may apply to any historic built environmental feature, and to historic or prehistoric archaeological sites. Properties or sites that are eligible for inclusion in the CRHR are termed “historical resources.” Under the provisions of CEQA Guidelines Section 15064.5(a)(3), generally a lead agency should find that a property is historically significant if it determines that the property meets one or more of the criteria for listing on the CRHR, which extend to any building, structure, feature or site that:

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

With few exceptions, to qualify as a historical resource a property must be at least 50 years old and also must retain physical integrity and integrity to its period of significance. For historic structures and buildings, significantly altering the setting, remodeling, or moving the structure may diminish or destroy its integrity. However, under some conditions, a building that has been moved or altered may still retain its historic significance. Landscaping or landscape features may, in some cases, contribute to the significance of an historic architectural property. Such elements would be assessed as part of the evaluation of the related historic architectural property.

Archaeological sites may also qualify as historical resources under the CEQA Guidelines Section 15064.5(a)(3). Archaeological sites most often are assessed relative to CRHR Criterion D (for potential to yield data important to history or prehistory). An archaeological deposit that has been extensively disturbed and archaeological artifacts found in isolation may not be eligible for listing on the CRHR, because the lack of stratigraphic context may reduce the potential for the resource to yield significant data. A resource that does not meet one of the criteria for eligibility to the CRHR is not a historical resource under CEQA, and impacts to such a property are not significant.

7.5.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on cultural resources are evaluated in Section 4.5 of the 2003 LRDP EIR. The Project is within the scope of analysis in the 2003 LRDP EIR and significant and potentially significant cultural resources impacts identified in the 2003 LRDP EIR that are relevant to the Project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR.

2003 LRDP EIR Impacts CULTURAL RESOURCES		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.5-1	Implementation of the 2003 LRDP could damage or destroy an archaeological resource or historic building or structure as the result of grading, excavation, ground disturbance or other project development.	PS	LS
4.5-2	Implementation of the LRDP could cause a substantial adverse change in the significance of a historical resource or unique archaeological resource, as defined in CEQA Guidelines 15064.5, as the result of ground disturbance, alteration, removal or demolition associated with project development.	PS	LS

2003 LRDP EIR Impacts CULTURAL RESOURCES		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.5-3	Implementation of the LRDP could cause a substantial adverse change in the significance of a historical resource or unique archaeological resource, as defined in CEQA Guidelines 15064.5, and the values that contribute to the significance of the resource cannot be preserved through documentation and data recovery.	S	SU
4.5-4	Implementation of the 2003 LRDP could disturb human remains, including those interred outside of formal cemeteries.	PS	LS
4.5-5	Development under the 2003 LRDP would contribute to cumulative damage to and loss of the resource base of unique archeological resources and historical resources (including archeological sites and historic buildings and structures) in Yolo and Solano counties.	S	SU

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the Project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the Project description and will not be readopted in this Initial Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

2003 LRDP EIR Mitigation Measures

CULTURAL RESOURCES

4.5-1(a) As early as possible in the project planning process, the campus shall define the project's area of potential effects (APE) for archaeological resources and, if structures are present on the site, for historic structures. The campus shall determine the potential for the project to result in cultural resource impacts, based on the extent of ground disturbance and site modification anticipated for the Project. Based on this information, the campus shall:

(i) Prepare an inventory of all buildings and structures within the APE that will be 50 years of age or older at the time of project construction for review by a qualified architectural historian. If no structures are present on the site, there would be no impact to historic built environment resources from the project. If potentially historic structures are present, LRDP Mitigation 4.5-1(c) shall be implemented.

(ii) Determine the level of archaeological investigation that is appropriate for the project site and activity, as follows:

- Minimum: excavation less than 18 inches deep and in a relatively small area (e.g., a trench for lawn irrigation, tree planting, etc.). Implement LRDP Mitigation 4.5-1(b)(i).
- Moderate: excavation below 18 inches deep and/or over a large area on any site that has not been characterized and is not suspected to be a likely location for archaeological resources. Implement LRDP Mitigation 4.5-1 (b)(i) and (ii).
- Intensive: excavation below 18 inches and/or over a large area on any site that is within 800 feet of the historic alignment of Putah Creek, or that is adjacent to a recorded archaeological site. Implement LRDP Mitigation 4.5-1 (i), (ii) and (iii).

4.5-1(b) During the planning phase of the project, the campus shall implement the following steps to identify and protect archaeological resources that may be present in the APE:

(i) For project sites at all levels of investigation, contractor crews shall be required 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 item (vi), below.

(ii) For project sites requiring a moderate or intensive level of investigation, a surface survey shall be conducted by a qualified archaeologist during project planning and design and prior to soil disturbing activities. For sites requiring moderate investigation, in the event of a surface find, intensive investigation will be implemented, as per item (iii), below. Irrespective of findings, the qualified archaeologist shall, in consultation with the campus, develop an archaeological monitoring plan to be implemented during the construction phase of the project. The frequency and duration of monitoring shall be adjusted in accordance with survey results, the nature of construction activities, and results during the monitoring period. In the event of a discovery, the campus shall implement item (vi), below.

(iii) For project sites requiring intensive investigation, irrespective of subsurface finds, the campus shall retain a qualified archaeologist to conduct a subsurface investigation of the project site, to ascertain whether buried archaeological materials are present and, if so, the extent of the deposit relative to the project's area of potential effects. If an archaeological deposit is discovered, the archaeologist will prepare a site record and file it with the California Historical Resource Information System.

(iv) If it is determined through step (iii), above, that the resource extends into the project's area of potential effects, the resource will be 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. If the resource does not qualify, or if no resource is present within the project area of potential effects (APE), this will be noted in the environmental document and no further mitigation is required unless there is a discovery during construction (see (vi), below).

(v) If a resource within the project APE 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, the establishment of a preservation easement, or other means that will permit avoidance or substantial preservation in place of the resource. If avoidance or substantial preservation in place is not possible, the campus shall implement LRDP Mitigation 4.5-2(a).

(vi) If a 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 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 project. LRDP Mitigation 4.5-1(b), steps (iii) through (vii) shall be implemented.

(vii) A written report of the results of investigations will be prepared by a qualified archaeologist and filed with the appropriate Information Center of the California Historical Resources Information System.

4.5-1(c) (i) Before altering or otherwise affecting a building or structure 50 years old or older, the campus shall retain a qualifed architectural historian to record it on a California Department of Parks and Recreation DPR 523 form or equivalent documentation. Its significance shall be assessed by a qualified architectural historian, using the significance criteria set forth for historic resources under CEQA Guidelines Section 15064.5. The evaluation process shall include the development of appropriate historical background research as context for the assessment of the significance of the structure in the history of the University system, the campus, and the region. For historic buildings, structures or features that do not meet the CEQA criteria for historical resource, no further mitigation is required and the impact is less than significant.

(ii) For a building or structure that qualifies as a historic resource, the architectural historian and the campus shall consult to consider measures that would enable the project to avoid direct or indirect impacts to the building or structure. These could include preserving a building on the margin of the project site, using it "as is," or other measures that would not alter the building. If the project cannot avoid modifications to a significant building or structure, the campus shall implement LRDP Mitigation 4.5-2.

4.5-2(a) For an archaeological site that has been determined by a qualified archaeologist to qualify as an historical resource or a unique archaeological resource through the process set forth under LRDP Mitigation 4.5-1(b), and where it has been determined under LRDP Mitigation 4.5-1(b) that avoidance or preservation in place is not feasible, a qualified archaeologist, in consultation with the campus, shall:

(i) Prepare a research design and archaeological data recovery plan for the recovery that will capture those categories of data for which the site is significant, and implement the data recovery plan prior to or during development of the site.

(ii) Perform appropriate technical analyses, prepare a full written report and file it with the appropriate information center, and provide for the permanent curation of recovered materials.

(iii) 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 4.5-3.

4.5-2(b) For a structure or building that has been determined by a qualified architectural historian to qualify as an historical resource through the process set forth under LRDP Mitigation 4.5-1(c), and where it has been determined under LRDP Mitigation 4.5-1(c) that avoidance is not feasible, documentation and treatment shall be carried out as described below:

(i) If the building or structure can be preserved on site, but remodeling, renovation or other alterations are required, this work shall be conducted in compliance with the "Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings" (Weeks and Grimmer 1995).

(ii) If a significant historic building or structure is proposed for major alteration or renovation, or to be moved and/or demolished, the campus shall ensure that a qualified architectural historian thoroughly documents the building and associated landscaping and setting. Documentation shall include still and video photography and a written documentary record of the building to the standards of the Historic American Building Survey (HABS) or Historic American Engineering Record (HAER), including accurate scaled mapping, architectural descriptions, and scaled architectural plans, if available. A copy of the record shall be deposited with the University archives, Shields Library Special Collections. The record shall be accompanied by a report containing site-specific history and appropriate contextual information. This information shall be gathered through site specific and comparative archival research, and oral history collection as appropriate.

(iii) If preservation and reuse at the site are not feasible, the historical building shall be documented as described in item (ii) and, when physically and financially feasible, be moved and preserved or reused.

(iv) If, in the opinion of the qualified architectural historian, the nature and significance of the building is such that its demolition or destruction cannot be fully mitigated through documentation, 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 structure to be preserved intact. These could include project redesign, relocation or abandonment. If no such measures are feasible, the campus shall implement LRDP Mitigation 4.5-3.

4.5-3 If a significant historic resource or unique archaeological resource cannot be preserved intact, before the property is damaged or destroyed the campus shall ensure that the resource is appropriately documented, as follows.

(i) For a built environment feature, appropriate documentation is described under LRDP 4.5-2 (b) (iii).

(ii) For an archaeological site, a program of research-directed data recovery shall be conducted and reported, consistent with LRDP Mitigation 4.5-2(a).

4.5-4(a) Implement LRDP Mitigation 4.5-1, 4.5-2 and 4.5-3 to minimize the potential for disturbance or destruction of human remains in an archaeological context and to preserve them in place, if feasible.

4.5-4(b) Provide a representative of the local Native American community an opportunity to monitor any excavation (including archaeological excavation) within the boundaries of a known Native American archaeological site.

4.5-4(c) In the event of a discovery on campus of human bone, suspected human bone, or a burial, all excavation in the vicinity will halt immediately and the area of the find will be 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 Yolo or Solano County Coroner (depending on the county of the find) of the find before additional disturbance occurs. Consistent with California Health and Safety Code § 7050.5(b), which prohibits disturbance of human remains uncovered by excavation until the Coroner has made a

2003 LRDP EIR Mitigation Measures	
CULTURAL RESOURCES	
	finding relative to PRC 5097 procedures, the campus will ensure that the remains and vicinity of the find are protected against further disturbance. 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).
4.5-4(d)	If human remains cannot be left in place, the campus shall ensure that the qualified archaeologist and the MLD are provided opportunity to confer on archaeological treatment of human remains, and that appropriate studies, as identified through this consultation, are carried out prior to reinterment. The campus shall provide results of all such studies to the local Native American community, and shall provide an opportunity of local Native American involvement in any interpretative reporting. As stipulated by the provisions of the California Native American Graves Protection and Repatriation Act, the campus shall ensure that human remains and associated artifacts recovered from campus projects on state lands are repatriated to the appropriate local tribal group if requested.
5.5-5	Implement LRDP Mitigations 4.5-1 through 4.5-4.

7.5.4 Environmental Checklist and Discussion

CULTURAL RESOURCES Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☑	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☑	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☐	☑
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☑	☐	☐

a) The Project site contains one built-environment resource: Emerson Hall located on Oxford Circle near Wake Forest Drive, which was constructed in 1967. The building was evaluated for NRHP, NRHR, and CHL designation criteria, and was also assessed for integrity. As a result of the evaluation, Emerson Hall was not found eligible under all designation criteria and integrity requirements due to a lack of historical associations. The building does not embody any distinctive characteristics of a type, period, region, or method of construction; represent the work of an important creative individual; possesses high artistic values; or have the potential to yield information important in history.

The subject property is not eligible under all NRHP, CRHR, and CHL designation criteria and integrity requirements. As such, the subject property is not a historical resource under CEQA, and does not appear to be a historical resource eligible for the Master List (PRC 5024(a)). Therefore, the proposed demolition of the subject property would result in a less-than-significant impact to historical resources under CEQA.

The 2003 LRDP EIR identified that development under the 2003 LRDP would contribute to the cumulative damage to and loss of historical resources in Yolo and Solano Counties (LRDP Impact 4.5-5). UC Davis cultural resources protocols, as stipulated in LRDP EIR Mitigation Measures 4.5-1 through 4.5-4, minimize the impact of development under the 2003 LRDP on historical resources, because the campus carries out a continuing program of archaeological investigation, which in most cases enables the campus to avoid or preserve historical resources, and appropriately recover data from and document resources that cannot be preserved in place. The campus mitigation program has proven effective in preventing or mitigating damage to historical resources; therefore, the mitigation program is considered to have reduced the campus impacts to less-than-significant levels in all cases to date. However, because there are no measures that can fully mitigate this impact, and because UC Davis cannot guarantee implementation by other agencies of measures to protect historical resources, this cumulative impact is considered significant and unavoidable.

As described previously, the Project site does not include historic architectural resources and therefore the Project would not contribute to this significant cumulative impact on historic resources. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5), conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis or conclusion.

b) The CRR for the Project site included an evaluation of archeological resources within the Project area. Northwest Information Center records indicate that no archeological or built environment resources have been previously recorded within the Project site. The intensive pedestrian survey failed to identify any archaeological resources. In consideration of the severity of past disturbance to native soils, the topographic setting, and the negative subsurface testing results within 500 feet of the Project site, the likelihood of encountering unanticipated significant subsurface archaeological deposits or features is considered low.[4] The Project as currently designed will not impact any known archaeological resources. However, archaeological deposits with reported human remains have been identified within 2,000 feet of the Project site within similar geomorphic conditions. Given the obscured nature of the Project area and potential sensitivity of buried cultural deposits in the vicinity, there is a potential for previously unknown archaeological resources to be uncovered. Therefore, due to Project-specific conditions and investigation, periodic monitoring efforts would be required. Given the implementation of LRDP EIR Mitigation Measures 4.5-1(b) and 4.5-2(a) this impact would be less than significant.

The 2003 LRDP EIR identified that development under the 2003 LRDP would contribute to the cumulative damage to and loss of archeological resources in Yolo and Solano Counties (LRDP Impact 4.5-5). UC Davis cultural resources protocols, as stipulated in LRDP EIR Mitigation Measures 4.5-1 through 4.5-4, minimize the impact of development under the 2003 LRDP on unique archeological resources, because the campus carries out a continuing program of archaeological investigation, which in most cases enables the campus to avoid or preserve unique archeological resources, and appropriately recover data from and document resources that cannot be preserved in place. The campus mitigation program has proven effective in preventing or mitigating damage to archeological resources; therefore, the mitigation program is considered to have reduced the campus impacts to less than significant in all cases to date. However, because there are no measures that can fully mitigate this impact, and because UC Davis cannot guarantee implementation by other agencies of measures to protect archeological resources, this cumulative impact is considered significant and unavoidable.

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4 Subsurface testing was conducted by Pacific Legacy in 1996, as described in the CRR, attached as Appendix C.

Because any disturbance of native soils involves the potential to result in impacts to archaeological resources, the Project could contribute to this impact. LRDP Mitigation Measure 4.5-1, as required by LRDP Mitigation Measure 4.5-5, which is relevant to the Project, requires the campus to implement the measures discussed herein to survey and protect cultural resources, and therefore the Project's contribution to this significant cumulative impact would not be cumulatively considerable. Furthermore, this significant cumulative impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5), conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis or conclusion.

c) During the course of development at UC Davis, extensive excavations for buildings and infrastructure, and extensive agricultural operations have not revealed the presence of unique paleontological or geological resources. It appears that the campus lacks unique paleontological and geological resources due to the deep alluvial deposition of fairly uniform soil types in the area. No impact would occur.

d) The 2003 LRDP EIR found the potential for development under the 2003 LRDP to disturb human remains, including those interred outside of formal cemeteries (LRDP Impact 4.5-4). LRDP Mitigation 4.5-4(a-d), included in the Project, would ensure that human remains in archaeological and isolated contexts would be protected from destruction that might take place from development through measures including identification, Native American consultation, preservation in place or recovery, respectful treatment and study, and reinternment. Therefore, this impact would be less than significant.

7.6 GEOLOGY, SOILS, AND SEISMICITY

7.6.1 Background

Section 4.6 of the 2003 LRDP EIR addresses the geology, soils, and seismicity effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the 'Setting' subsection of Section 4.6 of the 2003 LRDP EIR and provides updated information, as relevant.

Environmental Setting

The campus is located within the Putah Creek Plain of California's Great Valley geomorphic province. Except for the somewhat raised elevation along the levee adjacent to Putah Creek, the campus and surrounding area is topographically flat. Soils on campus and in the vicinity generally contain a high amount of silt and clay, and as a result, are moderately to slowly permeable and have slow runoff rates, minimal erosion hazards, and moderate to high shrink-swell potential (the potential for soil volume to change with a loss or gain in moisture). The predominant soil constraint to construction on the campus is the soil's shrink-swell potential.

A series of low foothills, including the Dunnigan Hills, the Capay Hills, and the English Hills, lie approximately 20 miles west of the campus at the eastern base of the Coast Range. The presence of subsurface thrust faults within these regional foothills and within 100 miles of the campus indicates the potential for seismic ground shaking in the Davis region. The Davis region is not located within an Alquist-Priolo Fault Zone as defined in the Alquist-Priolo Earthquake Fault Zoning Act, which is designed to prohibit the construction of structures for human occupancy across active faults. According to the California Geological Survey's Probabilistic Seismic Hazard Assessment for the State of California, the peak ground acceleration with a 10% probability of being exceeded in 50 years is 0.280 g at the

Project site (CDC 2008). By comparison, in most parts of the San Francisco Bay Area, the peak ground acceleration is 0.5 g or greater. Likely effects of ground shaking during a probable maximum intensity earthquake for the area could include structural damage to stucco, masonry walls, and chimneys, which could expose people to risks associated with falling objects and potential building collapse.

Project Site

The nearest faults mapped near the Project site are the Dunnigan Hills and Vaca faults located approximately 15 miles north and 17 miles southwest, respectively. The projected Segment 3 trace of the Great Valley fault is located approximately 10 miles west of the Project site, although this fault is a blind fault and does not show evidence of surface rupture.

A geotechnical study was prepared for the adjacent Webster Hall, which shows the Project site is underlain by alluvial silts, clays and sands with low to medium plasticity in the upper 15 to 20 feet. Firmer soils of the Modesto Formation were located below the upper alluvium soils. Groundwater was not encountered during the boring tests and the California Department of Water Resources shows groundwater to be approximately 35 feet below existing ground surface (Kleinfelder 2016).

7.6.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers an impact related to geology, soils, and seismicity significant if growth under the 2003 LRDP would:

- Expose people or structures to potential substantial adverse effects involving strong seismic ground shaking.
- Expose people or structures to potential substantial adverse effects involving seismic-related ground failure.
- Result in substantial soil erosion or the loss of topsoil. (Impacts associated with the effect of erosion on water quality are addressed in Section 7.9, Hydrology and Water Quality.)
- 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.
- Be located on expansive soil, creating substantial risks to life or property.
- 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.

Additional standards from the CEQA Guidelines Appendix G Environmental Checklist (a,i) and (a,iv) in the checklist in Section 7.6.4) were found not applicable to campus growth under the 2003 LRDP.

7.6.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP related to geology, soils, and seismicity are evaluated in Section 4.6 of the 2003 LRDP EIR. As discussed in Section 7.6.4, the Project would not result in impacts related to geology, soils, and seismicity. For this reason, any mitigation measures identified in the 2003 LRDP EIR are not relevant to the Project.

2003 LRDP EIR Impacts GEOLOGY, SOILS, & SEISMICITY		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.6-5	Cumulative development, including the development on campus under the 2003 LRDP, could expose people or structures to potential adverse effects involving seismic ground shaking.	LS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

7.6.4 Environmental Checklist and Discussion

GEOLOGY, SOILS, & SEISMICITY Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
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.	☐	☐	☐	☐	☑
ii) Strong seismic ground shaking?	☐	☐	☐	☑	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☑	☐
iv) Landslides?	☐	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☑	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☑	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☑	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☐	☑

a,i) The UC Davis campus and the surrounding area, including the Project site, are not located within an Alquist-Priolo Earthquake Fault Zone. The Dunnigan Hills and Vaca faults are the closest mapped faults to the site located approximately 15 miles north and 17 miles southwest, respectively. Therefore, no impact would occur from rupture of a known Alquist-Priolo earthquake fault zone.

a,ii) The campus is located in a seismically active area that could experience ground shaking, liquefaction, and settlement. Significant magnitude earthquakes from the nearby faults, or other larger, but more distant faults to the west could generate moderate ground shaking at the Project site. The peak ground acceleration for the Project site is estimated to be 0.280 g. This intensity of seismic groundshaking has the potential to dislodge objects from shelves and to damage or destroy buildings and other structures. In the case of such a seismic event, people on the Project site and in the area would be exposed to these hazards.

University projects must follow the seismic provisions of the California Building Code (CBC). Compliance is ensured through review by the Division of the State Architect. In addition, the Project must comply with University of California Seismic Safety Policy. These existing requirements would address potential seismic issues and the impact would be less than significant.

a,iii) See the discussion in item (c).

a,iv) The UC Davis campus and the surrounding area, including the Project site, are characterized by flat topography and therefore would not be subject to landslides. No impact would occur.

b) The soil types that occur on the Project site are alluvial silts and clays, and these soil types have minimal erosion hazard associated with them (Kleinfelder 2016). Therefore, this impact was determined to be less than significant in the 2003 LRDP EIR. Additionally, the University or its contractor would be required to apply for coverage under the State of California's Construction General Permit (CGP), to develop and implement a Stormwater Pollution Prevention Program (SWPPP); and report annually on compliance measures consistent with the requirements of the CGP. The relationship between receiving water quality and potential soil erosion as a result of construction activities is addressed in items (a) and (c) in Section 7.9, Hydrology and Water Quality.

c) According to the Geotechnical Report prepared for the Webster Hall, the potential for liquefaction on the Project site is low (Kleinfelder 2016). Furthermore, as discussed under item (a,ii), campus policy requires compliance with the CBC and the University of California Seismic Safety Policy, which include structural and nonstructural seismic safety provisions. Therefore, because the Project would comply with the CBC and the University of California Seismic Safety Policy, impacts associated with seismic-related ground failure would be less than significant.

d) The soils in several areas of the campus and near campus have high shrink/swell potential and on a site-specific basis could have the potential to create risk to life or property. Campus policy requires compliance with the CBC, which includes provisions for construction on expansive soils such as proper fill selection, moisture control, and compaction during construction. The Project would comply with the CBC, which would ensure that this impact is less than significant.

e) The 2003 LRDP EIR identifies that an impact would result if soils are incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems. No septic tanks or alternative wastewater disposal systems are included in the Project, and there would be no impact.

Cumulative Impacts

Impact 4.6-5 of the 2003 LRDP EIR concluded that development under the 2003 LRDP, in conjunction with other development in the region, would not result in significant cumulative impacts related to geology, soils, and seismicity. The campus minimizes hazards associated with damage or destruction to buildings and other structures by reviewing and approving all draft building plans for compliance with the California Building Code (CBC). The CBC (Title 24 California Code of Regulations) identifies the minimum standards for structural design and construction in California, including specific requirements for seismic safety. The campus also adheres to the University of California Seismic Safety Policy, which requires compliance with the provisions of the CBC and anchorage for seismic resistance of nonstructural building elements such as furnishings, fixtures, material storage facilities, and utilities that could create a hazard if dislodged during an earthquake. Because the Project is within the scope of development under the 2003 LRDP and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the Project would not alter this previous analysis or conclusion.

7.7 GREENHOUSE GAS EMISSIONS

This section discusses the existing conditions related to greenhouse gases (GHGs) and global climate change and evaluates the potential impacts from implementation of the Project. This section also provides a brief discussion of the applicable federal, state, regional, and local agencies that regulate, monitor, and control GHG emissions. The analysis in this Initial Study finds that the Project would result in less than significant GHG impacts.

The following sources were used to prepare this section of the Initial Study:

- UC Davis 2003 Long Range Development Plan (2003 LRDP)
- YSAQMD's Handbook for Assessing and Mitigating Air Quality Impacts
- CalEEMod version 2016.3.2
- The UC Davis 2009–2010 Climate Action Plan

7.7.1 Background

Environmental Setting

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind, lasting for an extended period (decades or longer). Gases that trap heat in the atmosphere are often called GHGs. The greenhouse effect traps heat in the troposphere through a threefold process: (1) short-wave radiation emitted by the Sun is absorbed by the Earth; (2) the Earth emits a portion of this energy in the form of long-wave radiation; and (3) GHGs in the upper atmosphere absorb this long-wave radiation and emit this long-wave radiation into space and back toward the Earth. This trapping of the long-wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide, O_3, and water vapor. Some GHGs, such as CO_2, CH_4, and nitrous oxide, occur naturally and are emitted to the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely byproducts of fossil-fuel combustion, whereas CH_4 results mostly from off-gassing associated with agricultural practices and landfills. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride, which are associated with certain industrial products and processes (CAT 2006).

The Intergovernmental Panel on Climate Change (IPCC) developed the Global Warming Potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas (IPCC 1996). The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2007). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons of CO_2 equivalent (MT CO_2E).

Contributions to Greenhouse Gas Emissions

United States Emissions

Per the EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2015* (U.S. EPA 2017b), total United States GHG emissions were approximately 6,586.7 million metric tons (MMT) CO_2E in 2015. The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 82.2% of total GHG emissions (5,411.4 MMT CO_2E). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 93.3% of CO_2 emissions in 2015 (5,049.8 MMT CO_2E). Relative to 1990, gross United States GHG emissions in 2015 were higher by 3.5%; down from a high of 15.5% above 1990 levels in 2007. GHG emissions decreased from 2014 to 2015 by 2.3% (153.0 MMT CO_2E), and overall, net emissions in 2015 were 11.5% below 2005 levels (U.S. EPA 2017b).

State of California Emissions

According to California's 2000–2015 GHG emissions inventory (2017 edition), California emitted 440.36 MMT CO_2E in 2015, including emissions resulting from out-of-state electrical generation (CARB 2017a). The sources of GHG emissions in California include transportation, industrial uses, electric power production from both in-state and out-of-state sources, commercial and residential uses, agriculture, high global-warming potential substances, and recycling and waste. The California GHG emission source categories (as defined in CARB's 2008 Scoping Plan [CARB 2008]) and their relative contributions in 2015 are presented in **Table 7.7-1, Annual GHG Emissions in California**.

Table 7.7-1
Annual GHG Emissions in California

Source Category	Annual GHG Emissions (MMT CO_2E)	Percent of Total[a]
Transportation	164.63	37%
Industrial[b]	91.71	21%
Electric power[c]	83.67	19%
Commercial and residential	37.92	9%
Agriculture	34.65	8%
High GWP substances	19.05	4%
Recycling and waste	8.73	2%
Total	**440.36**	**100%**

Source: CARB 2017a.
Notes: Emissions reflect the 2015 California GHG inventory.
MMT CO_2E = million metric tons of carbon dioxide equivalent per year
[a] Percentage of total has been rounded, and total may not sum due to rounding.
[b] The Aliso Canyon natural gas leak event released 1.96 MMT CO_2E of unanticipated emissions in 2015 and 0.52 MMT CO_2E in 2016. These leak emissions will be fully mitigated according to legal settlement and are tracked separately from routine inventory emissions.
[c] Includes emissions associated with imported electricity, which account for 33.74 MMT CO_2E annually.

During the 2000 to 2015 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14.0 MT per person to 11.3 MT per person in 2015, representing a 19% decrease. In addition, total GHG emissions in 2015 were approximately 1.5 MMT CO_2E less than 2014 emissions. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California is on track to meet the 2020 target of 431 MMT CO_2E (CARB 2017a).

Regulatory Considerations

Federal

Massachusetts v. EPA. In *Massachusetts v. EPA* (April 2007), the U.S. Supreme Court directed the EPA administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In December 2009, the administrator signed a final rule with the following two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is the "endangerment finding."
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act of 2007. The Energy Independence and Security Act of 2007 (December 2007), among other key measures, would do the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020, and directs National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy-efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards. In response to the U.S. Supreme Court ruling discussed previously, the Bush Administration issued EO 13432 in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Barack Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks (U.S. EPA 2017b).

In addition to the regulations applicable to cars and light-duty trucks described previously, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6%–23% over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (U.S. EPA and NHTSA 2016).

State

The following text summarizes key state laws and regulations related to GHG emissions.

California Code of Regulations - Title 24. Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically established Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed every few years by the Building Standards Commission and the California Energy Commission (CEC) (and revised if necessary) (California Public Resources Code, Section 25402[b][1]). The regulations receive input from members of industry, as well as the public, with the goal of "reducing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (California Public Resources Code, Section 25402). These regulations are carefully scrutinized and analyzed for technological and economic feasibility (California Public Resources Code, Section 25402[d]) and cost effectiveness (California Public Resources Code, Sections 25402[b][2] and [b][3]). As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The current Title 24 standards are the 2016 Title 24 building energy efficiency standards, which became effective January 1, 2017. The updated standards will further reduce energy used and associated GHG emissions compared to previous standards, such as the 2013 Title 24 standards. In general, single-family homes built to the 2016 standards are anticipated to use about 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and nonresidential buildings built to the 2016 standards will use an estimated 5% less energy than those built to the 2013 standards (CEC 2015).

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings and schools and hospitals. The CALGreen 2016 standards became effective January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- 65% of construction and demolition waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements, stricter water conservation, 65% diversion of construction and demolition waste, 10% recycled content in building materials, 20% permeable paving, 20% cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements, stricter water conservation, 80% diversion of construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, 25% cement reduction, and cool/solar-reflective roofs.

The California Public Utilities Commission (CPUC), CEC, and CARB also have a shared, established goal of achieving zero net energy performance for new construction in California. The key policy timelines include (1) all new residential construction in California will be zero net energy by 2020, and (2) all new commercial construction in California will be zero net energy by 2030.

Executive Order S-3-05. In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order (EO) S-3-05, which set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80% below 1990 levels.

EO S-3-05 also directed the CalEPA to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. The Climate Action Team (CAT) was formed, which subsequently issued reports from 2006 to 2010 (CAT 2017).

Assembly Bill 32. In furtherance of the goals established in EO S-3-05, the Legislature enacted Assembly Bill (AB) 32 (Núñez and Pavley). The bill is referred to as the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 provided initial direction on creating a comprehensive multiyear program to limit California's GHG emissions at 1990 levels by 2020 and initiate the transformations required to achieve the state's long-range climate objectives.

Senate Bill 375. Senate Bill (SB) 375 (Steinberg) (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035 and to update those targets every 8 years. SB 375 requires the state's 18 regional metropolitan planning organizations to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP) that will achieve the GHG reduction targets set by CARB. If a metropolitan planning organization is unable to devise an SCS to achieve the GHG reduction target, the metropolitan planning organization must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Senate Bill 32 and Assembly Bill 197. SB 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to the Board as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and requires CARB to identify specific information for GHG emissions reduction measures when updating the scoping plan.

CARB's 2007 Statewide Limit. In 2007, in accordance with California Health and Safety Code, Section 38550, CARB approved a statewide limit on the GHG emissions level for year 2020 consistent with the determined 1990 baseline (427 MMT CO_2E).

CARB's Climate Change Scoping Plan. One specific requirement of AB 32 is for CARB to prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (California Health and Safety Code, Section 38561[a]) and to update the plan at least once every 5 years. In 2008, CARB approved the first scoping plan. The *Climate Change Scoping Plan: A Framework for Change* (Scoping Plan) included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives. The key elements of the Scoping Plan include the following (CARB 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
2. Achieving a statewide renewable energy mix of 33%
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets

5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (17 CCR 95480 et seq.)
6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

The Scoping Plan also identified local governments as essential partners in achieving California's goals to reduce GHG emissions because they have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Specifically, the Scoping Plan encouraged local governments to adopt a reduction goal for municipal operations and for community emissions to reduce GHGs by approximately 15% from then levels (2008) by 2020. Many local governments developed community-scale local GHG reduction plans based on this Scoping Plan recommendation.

In 2014, CARB approved the first update to the Scoping Plan. The *First Update to the Climate Change Scoping Plan: Building on the Framework* (First Update) defined the state's GHG emission reduction priorities for the next 5 years and laid the groundwork to start the transition to the post-2020 goals set forth in EO S-3-05. The First Update concluded that California is on track to meet the 2020 target but recommended a 2030 mid-term GHG reduction target be established to ensure a continuum of action to reduce emissions. The First Update recommended a mix of technologies in key economic sectors to reduce emissions through 2050, including energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies. As part of the First Update, CARB recalculated the state's 1990 emissions level, using more recent GWPs identified by the IPCC, from 427 MMT CO_2E to 431 MMT CO_2E.

In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in EO S-3-05. The Governor called on California to pursue a new and ambitious set of strategies, in line with the five climate change pillars from his inaugural address, to reduce GHG emissions and prepare for the unavoidable impacts of climate change. In the summer of 2016, the Legislature affirmed the importance of addressing climate change through passage of SB 32 (Pavley, Chapter 249, Statutes of 2016).

In January 2017, CARB released the *2017 Climate Change Scoping Plan Update* (2030 Scoping Plan) for public review and comment (CARB 2017b). The 2030 Scoping Plan builds on the successful framework established in the initial Scoping Plan and First Update, while identifying new, technologically feasible, and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target and define the state's climate change priorities to 2030 and beyond. The strategies' "known commitments" include implementing renewable energy and energy efficiency (including the mandates of SB 350), increased stringency of the Low Carbon Fuel Standard, measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant Plan, and increased stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, it recommends continuing the Cap-and-Trade Program and a measure to reduce GHGs from refineries by 20%.

For local governments, the 2030 Scoping Plan replaced the initial Scoping Plan's 15% reduction goal with a recommendation to aim for a community-wide goal of no more than 6 MT CO_2E per capita by 2030 and no more than 2 MT CO_2E per capita by 2050, which are consistent with the state's long-term goals. These goals are developed around the scientifically based levels necessary to limit global warming below 2 degrees Celsius (°C). The 2030 Scoping Plan recognized the benefits of local government GHG planning (e.g., through climate action plans) and provide more information regarding tools CARB is working on to support those efforts. It also recognizes the CEQA streamlining provisions for project-level review where there is a legally adequate climate action plan.[5]

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32, and the EOs and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. A project is considered consistent with the statutes and EOs if it meets the general policies in reducing GHG emissions in order to facilitate the achievement of the state's goals and does not impede attainment of those goals. As discussed in several cases, a given project need not be in perfect conformity with each and every planning policy or goals to be consistent. A project would be consistent if it will further the objectives and not obstruct their attainment.

CARB's Regulations for the Mandatory Reporting of Greenhouse Gas Emissions. CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (17 CCR 95100–95157) incorporated by reference certain requirements that EPA promulgated in its Final Rule on Mandatory Reporting of Greenhouse Gases (Title 40, Code of Federal Regulations, Part 98). Specifically, Section 95100(c) of the Mandatory Reporting Regulation incorporated those requirements that EPA promulgated in the Federal Register on October 30, 2009, July 12, 2010, September 22, 2010, October 28, 2010, November 30, 2010, December 17, 2010, and April 25, 2011. In general, entities subject to the Mandatory Reporting Regulation that emit over 10,000 MT CO_2E per year are required to report annual GHGs through the California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 MT CO_2E per year threshold are required to have their GHG emission report verified by a CARB-accredited third-party verified.

Executive Order B-30-15. EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in EO S-3-05. To facilitate achieving this goal, EO B-30-15 called for CARB to update the Scoping Plan to express the 2030 target in terms of MMT CO_2E. The EO also called for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

Senate Bill 605 and Senate Bill 1383. SB 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants (SLCPs) in the state, and SB 1383 (2016) requires CARB to approve and implement that strategy by January 1, 2018. SB 1383 also establishes specific targets for the reduction of SLCPs (40% below 2013 levels by 2030 for methane and HFCs, and 50% below 2013 levels by 2030 for anthropogenic black carbon) and provides direction for reductions from dairy and livestock operations and landfills.

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5 *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490, *San Francisco Tomorrow et al. v. City and County of San Francisco* (2015) 229 Cal.App.4th 498, *San Franciscans Upholding the Downtown Specific Plan v. City & County of San Francisco* (2002) 102 Cal.App.4th 656, and *Sequoyah Hills Homeowners Assn. V. City of Oakland* (1993) 23 Cal.App.4th 704, 719.

Executive Order S-14-08. EO S-14-08 (November 2008) focused on the contribution of renewable energy sources to meet the electrical needs of California while reducing the GHG emissions from the electrical sector. This EO required that all retail suppliers of electricity in California serve 33% of their load with renewable energy by 2020. Furthermore, the EO directed state agencies to take appropriate actions to facilitate reaching this target. The California Natural Resources Agency (CNRA), through collaboration with the CEC and California Department of Fish and Wildlife (formerly the California Department of Fish and Game), was directed to lead this effort.

Executive Order S-21-09 and Senate Bill X1-2. EO S-21-09 (September 2009) directed CARB to adopt a regulation consistent with the goal of EO S-14-08 by July 31, 2010. CARB was further directed to work with the CPUC and CEC to ensure that the regulation builds upon the Renewables Portfolio Standard (RPS) program and was applicable to investor-owned utilities, publicly owned utilities, direct access providers, and community choice providers. Under this order, CARB was to give the highest priority to those renewable resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health and can be developed the most quickly in support of reliable, efficient, cost-effective electricity system operations. On September 23, 2010, CARB initially approved regulations to implement a Renewable Electricity Standard. However, this regulation was not finalized because of subsequent legislation (SB X1-2, Simitian, statutes of 2011) signed by Governor Brown in April 2011.

SB X1-2 expanded the RPS by establishing a renewable energy target of 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation (30 MW or less), digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location.

SB X1-2 applies to all electricity retailers in the state including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must meet the renewable energy goals listed herein.

Senate Bill 350. SB 350 (October 2015) further expanded the RPS by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 included the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal.

California Air Pollution Control Officers Association. The California Air Pollution Control Officers Association (CAPCOA) is the association of air pollution control officers representing all 35 air quality agencies throughout California. CAPCOA is not a regulatory body, but it has been an active organization in providing guidance in addressing the CEQA significance of GHG emissions and climate change as well as other air quality issues (CAPCOA 2008).

Regional Programs, Plans, and Policies

In July 2007, the YSAQMD adopted the *Handbook for Assessing and Mitigating Air Quality Impacts* (CEQA Handbook). The CEQA Handbook does not provide any quantitative thresholds for assessing GHG emissions, but does state that GHG emissions are an area of concern in environmental documents. The CEQA Handbook recommends that at least a qualitative assessment is made, noting that vehicle trips represent a particular area of concern.

UC Davis 2003 Long Range Development Plan

The 2003 LRDP is the plan for the development of the campus. Although the 2003 LRDP does not contain policies that specifically address GHG emissions, it does contain a number of elements with respect to fuel- and energy-efficiency provisions and elements that would encourage walking and bicycling on campus and in surrounding neighborhoods, all of which would reduce GHG emissions.

UC Policy on Sustainability Practices

The Sustainable Practices Policy ("Policy") establishes goals in nine areas of sustainable practices: green building, clean energy, transportation, climate protection, sustainable operations, waste reduction and recycling, environmentally preferable purchasing, sustainable foodservice, sustainable water systems (UC Regents 2016). The UC Policy on Sustainable Practices – Climate Protection section identifies the following goals: reduction of GHG emissions back to 2000 levels by 2014, reduction of GHG emissions to 1990 levels by 2020, and development of a plan for becoming climate neutral, meaning that the University would have a neutral impact on the Earth's climate through reducing GHG emissions and by using carbon offsets or mitigation.

UC Office of the President Carbon Neutrality Initiative

This initiative sets a goal to bring the University of California system to carbon-neutrality in its operations by 2025 (UCOP 2013). To achieve this goal, the initiative proposes four efforts: (1) create a shared service center which will manage the supply of wholesale electricity to the five campuses currently eligible for direct access; (2) continue to invest in energy efficiency and renewable energy generation; (3) manage the purchase of natural gas and also develop renewable natural gas ("biogas"); and (4) engage in the portfolio management of allowances and offsets and compliance with California's cap and trade program and other environmental attribute programs in order to fund GHG reduction efforts.

UC Davis Climate Action Plan

The 2009–2010 Climate Action Plan (CAP) prepared by UC Davis, includes both the Davis and Sacramento campuses, as well as outlying facilities (UC Davis 2010). The CAP describes and addresses policy and regulatory requirements of (1) the UC Policy on Sustainable Practices, (2) AB 32, (3) the American College and University Presidents Climate Commitment, (4) CEQA, and (5) U.S. EPA reporting requirements. The CAP provides documentation of how campus GHG emissions are calculated, a report of then current (2008) emissions, estimates of past (to 1990) and future emissions (to 2020), a statement of GHG emission reduction goals, a characterization of options and methods to reduce emissions, and a blueprint for future action.

The CAP focuses on both 2014 and 2020 targets, with the understanding that climate neutrality will require fundamental shifts in global and national energy policy, energy production, and technologies currently using fossil fuels. The CAP also looks at GHG emissions associated with campus operations, instead of commuting and air travel, because emissions related to commuting and air travel are less than one-quarter those of campus operations. The CAP does provide analysis of commuting and air travel reduction options, but does not quantify emissions reductions for those options.

GHG emissions were calculated from 1990 to 2008, while using a mix of hard data and projected data for as many emission sources as possible. Calculated emissions for all of UC Davis, excluding commuting and air travel, are 245,837 MT CO_2E for year 2000 and 142,196 MT CO_2E for year 1990. In 2008, inventoried emissions in the California Climate Action Registry, excluding commuting and air travel, totaled 239,060 MT CO_2E, indicating that UC Davis had already met the 2014 target. Thus, the CAP defined a new emissions target for 2014 of 210,000 MT CO_2E, approximately equivalent to GHG levels in 1999. The UC Davis target to reach 1990 emissions by the year 2020 is about 40% below the 2008 emissions.

Inventorying for both direct and indirect emissions have shown consistently that the Davis campus contributes about 70% of the emissions total, the Sacramento campus contributes about 29% of the total, and the outlying facilities contribute about 1% of the total.

7.7.2 Standards of Significance

The significance criteria used to evaluate the Project's GHG emissions impacts is based on the recommendations provided in Appendix G of the CEQA Guidelines. For the purposes of this GHG emissions analysis, the Project would have a significant environmental impact if it would (14 CCR 15000 et seq.):

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

The CEQA Guidelines includes Section 15064.4, which states that, when making a determination of the significance of GHG emissions, a lead agency shall have discretion to determine whether to (1) use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use; and/or (2) rely on a qualitative analysis or performance based standards. Section 15064.4 also provides that a lead agency may consider the following factors when assessing the significance of GHG emissions on the environment: (1) the extent to which the Project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the Project emissions exceed a threshold of significance that the lead agency determines applies to the Project; and (3) the extent to which the Project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

Under CEQA, "the determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data."[6] CEQA grants agencies with the general authority to adopt criteria for determining whether a given impact is "significant."[7] When no guidance exists under CEQA, the agency may look to and assess general compliance with comparable regulatory schemes.

Although the YSAQMD has not proposed specific thresholds for GHGs, a neighboring jurisdiction, the Sacramento Metropolitan Air Quality Management District (SMAQMD), has adopted the quantitative threshold for both construction and operational GHG emissions of 1,100 MT CO_2E for land use development projects, based on substantial evidence (SMAQMD 2016). SMAQMD GHG thresholds have been used for other projects in the YSAQMD jurisdiction as well. A project that exceeds the thresholds may have a cumulatively considerable contribution of GHG emissions.

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6 *CEQA Guidelines* Section 15064(b).
7 See *Cal. Pub. Resources Code* Section 21082.

7.7.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on GHG emissions were not evaluated in the 2003 LRDP EIR. The inclusion of GHG emissions as an environmental impact for CEQA analysis began in 2007-08 when AB 32 was enacted, and the guidance on this matter has been evolving since that time. In 2010, modifications to Appendix G of the CEQA Guidelines resulted in the inclusion of detailed guidance for CEQA GHG impact analysis.

7.7.4 Environmental Checklist and Discussion

GREENHOUSE GAS EMISSIONS Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☑	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose or reducing the emissions of greenhouse gases?	☐	☐	☐	☑	☐

a) The Project's short-term construction-related and long-term operational emissions were estimated using the CalEEMod software (version 2016.3.2). The model applies inherent default values for various land uses, including trip generation rates based on the Institute of Transportation Engineers Trip Generation Manual, vehicle mix, trip length, average speed, etc. However, where Project-specific data was available, such data were input into the model (e.g., construction phases, timing, equipment, and estimated daily Project trips). All Project modeling results are included in Appendix B.

Construction

Construction of the Project would result in short-term GHG emissions through the use of construction equipment, trucks hauling construction materials and demolition debris, and worker trips. CalEEMod was used to calculate the annual GHG emissions based on the construction scenario as provided in Section 7.3, Air Quality, of this document. It is anticipated that demolition of the existing dormitory would commence sometime after construction of the adjacent Webster Hall. For the purpose of analysis, it was assumed that demolition would begin in September 2019. Building construction would begin thereafter in January 2020 and is expected to occur within a 3-year period, with completion in early 2022. **Table 7.7-2, Estimated Annual Construction GHG Emissions,** presents estimated construction emissions for the Project from years 2019 to 2022. Additional details regarding these calculations are provided in Appendix B.

Table 7.7-2
Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2E
	metric tons per year			
2019	117.49	0.02	0.00	118.11
2020	513.39	0.06	0.00	514.78
2021	514.07	0.05	0.00	515.38

Table 7.7-2
Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2E
	metric tons per year			
2022	81.25	0.01	0.00	81.48
			Maximum Annual Emissions	**515.38**
			Pollutant Threshold	*1,100*
			Threshold Exceeded?	**No**

Notes: See Appendix B for detailed results.
MT = metric tons; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2E = carbon dioxide equivalent.

As shown in Table 7.7-2, estimated maximum annual construction GHG emissions would be approximately 515 MT CO_2E per year. Therefore, construction impacts of the Project would not exceed the applied threshold of 1,100 MT CO_2E per year and impacts would be less than significant. No additional mitigation measures are required.

Operation

GHG emissions associated with operation of the Project are provided in **Table 7.7-3, Estimated Annual Operational Greenhouse Gas Emissions**. An operational GHG emissions comparison between the Project and existing dormitory is included in Table 7.7-3 to compare the Project's emissions to the existing dormitory's GHG emissions. As discussed in Section 7.3, Air Quality, UC Davis does not permit personal vehicles at this student housing location. Notably, vehicle emissions associated with operations of the Project would primarily consist of intermittent deliveries or maintenance work, which would be negligible. Therefore, mobile emissions associated with the Project were not quantified. UC Davis has targeted a certification of LEED Gold or higher for the Project. The LEED certification would require the Project to increase energy and water efficiency. The Project would also comply with the 2016 Title 24 building energy efficiency standards, which are included in CalEEMod. In addition, because the Project's first full year of operations would occur by 2022, a 20% reduction in water consumption and a 75% in waste diversion (goals established by the state to achieve by 2020) were also reflected within CalEEMod. Detailed emission projections are provided in Appendix B.

Table 7.7-3
Estimated Annual Operational Greenhouse Gas Emissions

Emissions Source	CO_2	CH_4	N_2O	CO_2E
	metric tons per year			
Existing				
Area Sources	3.03	0.00	0.00	3.11
Energy (Electricity and Natural Gas)	455.50	0.02	0.01	457.74
Solid Waste	6.44	0.38	0.00	15.96
Water and Wastewater	34.35	0.47	0.01	49.50
Combined Emissions	***499.32***	***0.87***	***0.02***	***526.31***
Proposed Project				
Area Sources	3.35	0.00	0.00	3.43
Energy (Electricity and Natural Gas)	459.32	0.02	0.00	461.80
Solid Waste	6.44	0.38	0.00	15.96
Water and Wastewater	29.40	0.47	0.01	44.54
Combined Emissions	***498.51***	***0.87***	***0.01***	***525.73***
			Net increase (Proposed Project minus Existing)	**(0.58)**
			Pollutant Threshold	*1,100*
			Threshold Exceeded?	**No**

Notes: See Appendix B for detailed results.

These estimates reflect implementation of a 20% reduction in water use (UC Davis Drought Response Plan) and 75% waste diverted from landfills (AB 341). The Existing land use energy intensity is based on the “historical” option in CalEEMod, since the buildings were originally built before year 2005. The number in parentheses corresponds with a reduction in emissions.
CO_2 = metric tons carbon dioxide; CH_4 = metric tons methane; N_2O = metric tons nitrous oxide; CO_2E = metric tons carbon dioxide equivalent

As shown in Table 7.7-3, the Project would result in a net decrease of less than 1 MT CO_2E/year relative to existing conditions. Therefore, the Project’s operational GHG emissions would not exceed the applied threshold of 1,100 MT CO_2E per year and the impact of the Project on climate change would be less than significant.

b) The GHG reduction plan applicable to the Project is the 2009–2010 UC Davis CAP. In addition, the UC Policy on Sustainable Practices includes policy goals, which would help guide UC Davis in reducing GHG emissions. The CAP identifies goals and policies that will help UC Davis meet reduction targets for 2014 and 2020, and ultimately achieving climate neutrality sometime in the near future. The Project is designed to conform to all applicable policies within the CAP and the UC Policy on Sustainability Practices. As previously discussed, the Project would achieve at least a certification of LEED Gold and would meet the 2016 Title 24 standards consistent with the CAP energy efficiency policy, the UC Policy on Sustainable Practices, and the UCOP Carbon Neutrality Initiative. In order to meet campus and UC sustainability goals, the Project would implement sustainability features such as using energy and water efficient appliances and insulating materials, reducing impermeable surfaces on site, and through the application of low emitting paints and materials during construction. By discouraging automobiles and encouraging alternative transportation (bicycle, pedestrian, and transit modes), the Project furthers the GHG reduction goals of the applicable policies. Furthermore, as shown in the operational analysis, the Project would result in a slight decrease in annual GHG emissions compared with the existing dormitory.

In regards to consistency with SB 32 (goal of reducing GHG emissions to 40% below 1990 levels by 2030) and EO S-3-05 (goal of reducing GHG emissions to 80% below 1990 levels by 2050), there are no established protocols or thresholds of significance for that future year analysis. However, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory of meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014). The 2030 Scoping Plan further iterates that CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets (CARB 2017b). As discussed previously, the Project would comply with the goals and policies of the UC Davis CAP and UC Policy on Sustainability Practices and would not conflict with the state’s trajectory toward future GHG reductions. In addition, since the specific path to compliance for the state in regards to the long-term goals will likely require development of technology or other changes that are not currently known or available, specific additional mitigation measures for the Project would be speculative and cannot be identified at this time. With respect to future GHG targets under the EOs, CARB has also made clear its legal interpretation that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet EO S-3-05’s 80% reduction target in 2050; this legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets. Finally, as evidenced previously, the Project would not exceed the applied threshold of 1,100 MT CO_2E per year for construction and operations. Because the Project would not exceed the threshold, this analysis provides support for the conclusion that the Project would not conflict with EO S-3-05’s GHG reduction goals for California. Therefore, this impact would be less than significant.

Based on the preceding considerations, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and no mitigation is required. This impact would be less than significant.

7.8 HAZARDS AND HAZARDOUS MATERIALS

7.8.1 Background

Section 4.7 of the 2003 LRDP EIR addresses the hazards and hazardous materials effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the 'Setting' subsection of Section 4.7 of the 2003 LRDP EIR.

Environmental Setting

A variety of hazardous materials are used on the UC Davis campus during the course of daily operations. Hazardous chemicals used on the campus include: chemical solvents, reagents, and aromatic hydrocarbons that are used in campus laboratories; pesticides, fungicides, and herbicides used by agricultural programs and in landscape maintenance; relatively small amounts of solvents, paints, and acids used by fine arts programs; gasoline and diesel fuels, oils and lubricants, antifreeze, cleaning solvents and corrosives, paints and paint thinners, and freon refrigerants used in vehicle and building maintenance. In addition, radioactive materials, biohazardous materials, and laboratory animals are used in teaching and research activities. The use of hazardous materials on the campus generates hazardous byproducts that must eventually be handled and disposed of as hazardous wastes.

Generation, transportation, and disposal of hazardous wastes are regulated by various agencies. The lead federal regulatory agency is the Environmental Protection Agency. The State Department of Toxic Substances Control (DTSC) has primary state regulatory responsibility but can delegate enforcement authority to local jurisdictions that enter into agreements with the state agency, as it did with Yolo County Department of Environmental Health (YCDEH) under the Certified Unified Program Agency (CUPA) program.

The campus' Office of Environmental Health and Safety (EH&S) coordinates most local, state, and federal regulatory compliance functions related to the campus' health, safety, and environmental issues. EH&S performs safety education and training, regulatory interpretation and applicability, approval of potentially hazardous procedures, resolution of safety problems, surveillance, and monitoring. In addition, EH&S provides guidance for several campus safety programs, including: the Chemical Inventory System, which tracks inventory and use of hazardous materials on campus; the CUPA Self-Audit Program, which complies with the terms of an agreement with the YCDEH; development of laboratory-specific Chemical Hygiene Plans; the Radiation and X-Ray Safety Programs; and the Biological Safety Administrative Advisory Committee. EH&S is also a working partner in such campus administrative advisory groups as the Chemical Safety Committee, the Radiation Safety Committees, the Animal Use and Care Committee, and the Biological Safety Committee. External administrative and benchmarking reviews of the EH&S programs are conducted periodically to identify means of further improving the programs.

Project Site

The Project site has a single three-story student housing building that was built in 1967. The building was constructed prior to the ban on asbestos use in 1989 and lead in household paints in 1978. A hazardous materials survey has not been completed for the building. Based on previous University housing projects, including the Webster Hall Replacement Project within the same housing development, it is assumed that asbestos containing materials (ACMs) and lead-based paints may be present in the existing structure.

7.8.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a hazards and hazardous materials impact significant if growth under the 2003 LRDP would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- 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.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school.
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.
- For a project within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the Project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Additional standards from the CEQA Guidelines Appendix G Environmental Checklist ("f" and "h" in the checklist in Section 7.8.4) were found not applicable to campus growth under the 2003 LRDP.

7.8.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP related to hazards and hazardous materials are evaluated in Section 4.7 of the 2003 LRDP EIR. The Project is within the scope of analysis in the 2003 LRDP EIR and potentially significant hazards and hazardous materials impacts identified in the 2003 LRDP EIR that are relevant to the Project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. In addition, LRDP Impacts 4.7-12 and 4.7-13, presented below, are considered less than significant prior to mitigation, but the 2003 LRDP EIR identified mitigation to further reduce the significance of these impacts. Less than significant impacts without mitigation measures are not presented here.

2003 LRDP EIR Impacts HAZARDS & HAZARDOUS MATERIALS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.7-12	Construction activities on campus under the 2003 LRDP would not expose construction workers and campus occupants to contaminated soil or groundwater.	LS	LS
4.7-13	Demolition or renovation of buildings under the 2003 LRDP would not expose construction workers or campus occupants to contaminated building materials.	LS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the Project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the Project description and will not be readopted in this Initial Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

2003 LRDP EIR Mitigation Measures HAZARDS & HAZARDOUS MATERIALS	
4.7-12	The campus shall perform due diligence assessments of all sites where ground-disturbing construction is proposed.
4.7-13	The campus shall survey buildings for potential contamination before any demolition or renovation work is performed.

7.8.4 Environmental Checklist and Discussion

HAZARDS & HAZARDOUS MATERIALS Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☑	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☑	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☐	☑
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☐	☑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☐	☑
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?	☐	☐	☐	☐	☑
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑	☐
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?	☐	☐	☐	☐	☑

a) The Project would use routine hazardous materials during construction (such as paints, solvents, gasoline for motorized equipment) and operation (such as cleaning chemicals, paints, and solvents). In addition, see item (d) below regarding hazardous materials (lead and asbestos) in the existing buildings.

Hazardous Chemicals

The 2003 LRDP EIR found that implementation of the 2003 LRDP would increase routine hazardous chemical use (LRDP Impact 4.7-1), routine generation of hazardous chemical wastes (LRDP Impact 4.7-2), and routine hazardous materials transport to and from the campus (LRDP Impact 4.7-8) by UC Davis laboratories, departments, and maintenance/support operations, which would not create significant hazards to the public or the environment. The campus achieves a high level of compliance with regulatory standards and campus policies relevant to use, transport, and disposal of hazardous materials, as discussed further in the 'Setting' subsection to Section 4.7 of the 2003 LRDP EIR. Hazardous waste treatment, storage, and disposal facilities currently have available capacity to accept and safely manage UC Davis chemical waste. The Project, as a residential development, would not use the kinds of hazardous chemicals that would be present in academic and research facilities on campus. The Project impact would be less than significant.

The 2003 LRDP EIR found that development under the 2003 LRDP, in conjunction with regional growth would not significantly increase the hazard to the public or environment from the use and transport of hazardous materials and the generation of hazardous wastes (LRDP Impact 4.7-18). The Project would generate minimal amounts of hazardous waste and would not contribute to the cumulative impact identified in the 2003 LRDP EIR.

Given the campus' and local jurisdiction's existing policies and compliance with state and federal regulations, the 2003 LRDP EIR found that cumulative impacts related to the use and transport of hazardous materials and the generation of hazardous waste are less than significant.

Radioactive Materials

No radioactive materials would be used in connection with the Project. No impact would occur.

Biohazardous Materials

No biohazardous materials would be used in connection with the Project. No impact would occur.

Laboratory Animals

No laboratory animals would be used in connection with the Project. No impact would occur.

Cumulative Impacts

The 2003 LRDP EIR concluded that implementation of the 2003 LRDP, in conjunction with other development in the region, would not result in significant cumulative effects related to hazards and hazardous materials. Because the Project is within the scope of development under the 2003 LRDP and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the Project would not alter this previous analysis or conclusion.

b) The 2003 LRDP EIR found that implementation of the 2003 LRDP would not 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 (Impact 4.7-9). Compliance with all applicable federal and state laws, as well as campus programs, practices, and procedures related to the transportation, storage, and use of hazardous materials (including LRDP mitigation measures 4.7-1 through 4.7-8), would continue for the Project as well as other projects proposed under the 2003 LRDP, minimizing the potential for an accidental release of hazardous materials and providing for prompt and effective cleanup if an accidental release occurs.

The 2003 LRDP EIR found that construction activities under the 2003 LRDP would not expose construction workers and campus occupants to contaminated soil or groundwater (LRDP Impact 4.7-12) and that demolition or renovation of buildings under the 2003 LRDP would not expose construction workers or campus occupants to contaminated building materials (LRDP Impact 4.7-13). Campus policy requires that due diligence surveys be performed for all Project sites as part of the Project planning process, per LRDP Mitigation Measures 4.7-12 and 4.7-13.

Hazardous materials and hazardous chemical waste is required to be collected by Environmental Health and Safety (EH&S) or by an off-site contractor approved by EH&S. Materials or waste is typically picked up by EH&S within 4 to 5 working days. Campus policies require that hazardous waste is properly packaged and labeled by users prior to pickup to diminish the potential for accident conditions.

Hazardous wastes on the campus are disposed of in the campus Environmental Services Facility (ESF), located approximately 0.15 mile from the intersection of Campbell Road and Garrod Drive. The facility was designed with protective engineering controls evaluated by a Certified Industrial Hygienist. Workers at the facility are required to use protective equipment to prevent workplace hazardous materials exposure.

Therefore, with the implementation of LRDP mitigation and the procedures outlined in the Radiological Survey and Sampling Plan, the impact related to exposure to existing contamination on the Project site would be less than significant.

c) The Project would use routine hazardous materials during construction (such as paints, solvents, gasoline for motorized equipment) and operation (such as cleaning chemicals, pesticides, and solvents) but would not involve any new sources of hazardous air emissions. Furthermore, the Project would not be located within 0.25 mile of a school. No impact would occur.

d) The Laboratory for Energy Related Research/South Campus Disposal site is the only campus site that is listed as a hazardous materials site pursuant to Government Code Section 65962.5. The Project would not disturb this site and no impact would occur.

e) The Project is approximately 1.6 miles northeast of the University airport. The 2003 LRDP EIR found that development of certain projects on the west campus under the 2003 LRDP could result in safety hazards associated with aircraft. However, the Project is not one of these projects and would not conflict with airport operations. Therefore, the impact would be less than significant.

f) The University Airport is a public use airport, not a private airstrip. No other airport facilities are in the immediate vicinity of the campus. No impact would occur. Refer to item (e) for a discussion of potential safety hazards associated with the University airport, a local public use airport.

g) The 2003 LRDP EIR found that implementation of the 2003 LRDP could interfere with the campus' Emergency Operations Plan through construction-related road closures (LRDP Impact 4.7-17). The Project site would be fenced off during demolition but vehicular access route, meeting minimum fire department requirements, would be maintained on the east side of the Project site, between Russell Boulevard to the south and Wake Forest Drive to the north, for the fire department and deliveries. No impact associated with interference of an adopted emergency response plan or emergency evacuation plan would occur.

h) Areas along Putah Creek are the only areas on the campus that could be susceptible to wildland fires. Urbanization will not occur in close proximity to these areas under the 2003 LRDP because land along Putah Creek is designated for Open Space and Teaching and Research Fields, and land adjacent to these open areas is designated primarily for Teaching and Research Fields and low density development. The Project site is located north of Putah Creek amid dense development. Therefore, no impact would occur.

7.9 HYDROLOGY AND WATER QUALITY

7.9.1 Background

Section 4.8 of the 2003 LRDP EIR addresses the hydrology and water quality effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the 'Setting' subsection of Section 4.8 of the 2003 LRDP EIR, modified as appropriate considering the Project's off-campus location.

Environmental Setting

Surface Water Resources

The UC Davis campus and the Project site are located in the Lower Sacramento watershed. Putah Creek, the principal waterway in the Davis area, originates from springs in the Mayacamas Mountains northwest of the campus, flows into Lake Berryessa, through Winters, along the southern boundary of Russell Ranch, along the southern boundary of UC Davis' west and south campuses, and eventually into the Yolo Bypass, an overflow channel for the Sacramento River.

Drainage within the UC Davis Campus is generally directed towards Putah Creek, whereas drainage within the City of Davis' 11 basins flows by gravity into the City's six detention ponds, one detention basin, and one drainage pond. Pump stations lift water from these facilities into the City's main drainage channels: the Covell Drainage Channel, Channel A, Mace Ranch Park Drainage Channel, and the El Macero Drainage Channel. The Project is located within the "H Street Pump Station Basin" which pumps stormwater collected within the basin to "Channel A" (Brown and Caldwell 2013). The City's main drainage channels ultimately drain to Willow Slough Bypass or the Yolo Basin Wetlands, Davis Site, east of the City. The Willow Slough Bypass consists predominately of runoff from agricultural lands to the north of the City. The quantity and quality of flows in Putah Creek are highly variable and depend on releases from Lake Berryessa, precipitation, storm water runoff, and treated effluent discharge. Because the Project is located on the north side of Russell Boulevard (along the boundary between the City and Campus drainage systems), drainage conveyed to Oxford Circle from the Project site goes into the City's stormwater system, whereas drainage conveyed on the south side of Russell Boulevard is primarily captured by the Campus' stormwater system.

Groundwater Resources

Potable water supply for the Project would be provided by the City of Davis, which as of June 2016 started phasing in surface water from the Sacramento River and will be phasing out groundwater as its primary source of water supply (City of Davis 2016a). Groundwater will be a supplemental water source moving forward. The aquifers relied upon by both the City and UC Davis consist of sand and gravel alluvial deposits that include deep and shallow/intermediate depth aquifers. Deep gravel and sand aquifers underlie the Project site between 600 to 1,500 feet below ground surface and supply the campus domestic/fire system. The shallow/intermediate depth sand and gravel aquifers underlie the Project site at depths from 150 to 800 feet below ground surface and supply the campus utility water system, main campus agricultural water needs, and campus and tenant farmer irrigation needs at Russell Ranch. Water levels in the shallow/intermediate aquifer vary seasonally and strongly correlate to precipitation. A generally upward recharge trend over the period from 1957 to 2002 indicates that there has not been long-term overdraft of the shallow/intermediate depth aquifers (Ludorff and Scalmanini 2003, as cited in UC Davis 2003).

Regional groundwater quality is generally characterized as having high mineral content. Calcium, magnesium, and sulfates have been identified as the dominant problematic constituents. In recent years, a number of City intermediate-depth wells have been removed from service due to water quality problems, including high concentrations of nitrates, iron, manganese, and selenium (Brown and Caldwell 2016). The City has constructed wells in the deep aquifer to obtain water with higher overall quality versus the current quality of water from the intermediate depth aquifer. Groundwater will continue to be disinfected, and treated as necessary to meet drinking water standards. Both the City of Davis and UC Davis have recently gained the ability to purchase wholesale treated surface water from the Woodland Davis Clean Water Agency, which will allow some of the City's intermediate aquifer wells to be kept for emergency supply only (Brown and Caldwell 2016).

Flooding and Drainage

The Project site is not located within a Federal Emergency Management Agency (FEMA) Special Flood Hazard Area, which includes 100-year flood zones (DWR 2016). Furthermore, the Project site is also not within a 500-year flood zone or other flood zone as mapped by the Department of Water Resources (DWR "Awareness" Floodplain), regional/special studies, or the U.S. Army Corps of Engineers (DWR 2016).

Project Site

The Project site contains one student housing building and associated concrete and asphalt surfaces such as plaza areas, walkways, and bike paths. The Project site is nearly flat-lying, and aside from a few planter boxes, narrow landscaping strips, and manicured lawn within one enclosed courtyard, is nearly all impervious. Stormwater runoff from portions of the roof and the interior courtyard section of the existing site is directed via roof downspouts, inlets, and gutters to an underground drain pipe that connects the City's public storm drain system at the end of Oxford Circle. The remainder of the Project site is drained by surface gutters and drain inlets, connecting to the City's storm drain system.

7.9.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a hydrology and water quality impact significant if growth under the 2003 LRDP would:

- Violate any water quality standards or waste discharge requirements.
- 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.
- 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 site or off site.

- 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 site or off site.
- Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- Otherwise substantially degrade water quality.
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows.
- Expose people or structures to a significant risk of loss, injury, or death involving flooding.

Additional standards from the CEQA Guidelines Appendix G Environmental Checklist ("g" and "j" in the checklist in Section 7.9.4) were found not applicable to campus growth under the 2003 LRDP.

7.9.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on hydrology and water quality are evaluated in Section 4.8 of the 2003 LRDP EIR. The Project is within the scope of analysis in the 2003 LRDP EIR and significant and potentially significant hydrology and water quality impacts identified in the 2003 LRDP EIR that are relevant to the Project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. In addition, Impact 4.8-1, presented below, is considered less than significant prior to mitigation, but mitigation measures were identified in the 2003 LRDP EIR to further reduce the significance of this impact. Other less than significant impacts that do not include mitigation measures are not presented here. Mitigation measures are included to reduce the magnitude LRDP Impact 4.8-5 and cumulative LRDP Impact 4.8-13, but these impacts are identified as significant and unavoidable because they cannot be fully mitigated.

2003 LRDP EIR Impacts HYDROLOGY & WATER QUALITY		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.8-1	Campus construction activities associated with implementation of the 2003 LRDP would not contribute substantial loads of sediment or other pollutants in storm water runoff that could degrade receiving water quality.	LS	LS
4.8-4	Campus growth under the 2003 LRDP would increase discharge of treated effluent from the campus wastewater treatment plant into the South Fork of Putah Creek, which could exceed waste discharge requirements and degrade receiving water quality.	PS	LS
4.8-5	Campus growth under the 2003 LRDP would increase the amount of water extracted from the deep aquifer and would increase impervious surfaces. This could result in a net deficit in the deep aquifer volume or a lowering of the local groundwater table but would not interfere substantially with recharge of the deep aquifer.	S	SU
4.8-6	Campus growth under the 2003 LRDP could increase the amount of water extracted from the shallow/intermediate aquifer and would increase impervious surfaces. Extraction from the shallow/intermediate aquifer could deplete groundwater levels and could contribute to local subsidence, and increased impervious coverage could interfere substantially with recharge. This could result in a net deficit in the intermediate aquifer volume or a lowering of the local groundwater table.	S	SU

2003 LRDP EIR Impacts HYDROLOGY & WATER QUALITY		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.8-12	Growth under the 2003 LRDP and other development in the region would increase discharge of treated effluent to the Putah Creek watershed, which could degrade receiving water quality.	PS	LS
4.8-13	Growth under the 2003 LRDP and other development in the region would increase the amount of water extracted from the deep aquifer and increase impervious surfaces. This could result in a net deficit in the deep aquifer volume or a lowering of the local groundwater table but would not interfere substantially with recharge of the deep aquifer.	S	SU
4.8-14	Growth under the 2003 LRDP and other development in the region would increase the amount of water extracted from shallow/intermediate aquifers and increase impervious surfaces. This could contribute to local subsidence, substantially deplete groundwater supplies, and could interfere substantially with recharge of the shallow/intermediate depth aquifer, resulting in a net deficit in the shallow/intermediate aquifer volume or a lowering of the local groundwater table.	S	SU

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the Project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the Project description and will not be readopted in this Initial Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

2003 LRDP EIR Mitigation Measures HYDROLOGY & WATER QUALITY	
4.8-1	The campus shall continue to comply with the NPDES state-wide General Permit for Discharge of Storm Water Associated with Construction Activity by implementing control measures and BMPs required by project-specific SWPPPs and with the Phase II SWMP to eliminate or reduce non-storm and storm water discharges to receiving waters.
4.8-4(a)	The campus shall continue to monitor and modify its pretreatment program, WWTP operation, and/or treatment processes as necessary to comply with WDRs.
4.8-4(b)	The campus shall implement a monitoring program specifically targeted at the following constituents: copper, cyanide, iron and nitrate + nitrite, and make appropriate modifications as necessary to the campus pretreatment program to avoid exceedance of permit limits for these constituents.
4.8-5(a)	The campus shall continue to implement water conservation strategies to reduce demand for water from the deep aquifer. Domestic water conservation strategies shall include the following or equivalent measures: (i) Install water efficient shower heads and low-flow toilets that meet or exceed building code conservation requirements in all new campus buildings, and where feasible, retrofit existing buildings with these water efficient devices. (ii) Continue the leak detection and repair program. (iii) Continue converting existing single-pass cooling systems to cooling tower systems. (iv) Use water-conservative landscaping on the west and south campuses where domestic water is used for irrigation. (v) Replace domestic water irrigation systems on the west and south campuses with an alternate water source (shallow/intermediate or reclaimed water), where feasible.

(vi) Install water meters at the proposed neighborhood to encourage residential water conservation.

(vii) Identify and implement additional feasible water conservation strategies and programs including a water awareness program focused on water conservation.

4.8-5(b) The campus shall continue hydrogeologic monitoring and evaluation efforts to determine the long-term production and quality trends of the deep aquifer.

4.8-5(c) To the extent feasible, new water supply wells in the deep aquifer should be located on the west campus in sands and gravels that are not used by or available to the City of Davis for deep water extraction.

4.8-5(d) If continued hydrogeologic monitoring and evaluation efforts identify constraints in the deep aquifer's ability to provide for the campus' long-term water needs, the campus will treat shallow/intermediate aquifer and/or surface water from the Solano Project to serve domestic water demand.

4.8-6(a) The campus shall continue to implement water conservation strategies to reduce demand for water from the intermediate aquifer. Utility water conservation strategies shall include the following or equivalent measures:

(i) Landscape, where appropriate, with native, drought resistant plants and use lawns only where needed for pedestrian traffic, activity areas, and recreation.

(ii) Install efficient irrigation systems including centrally controlled automatic irrigation systems and low-flow spray systems.

(iii) Apply heavy applications of mulch to landscaped areas to reduce evaporation

(iv) Use treated wastewater for landscape irrigation where feasible.

4.8-6(b) The campus shall continue to monitor shallow/intermediate aquifer water elevations at existing campus wells to ascertain whether there is any long-term decline in water levels.

4.8-6(c) The campus shall continue to participate in regional subsidence monitoring, including by installing an extensometer, to determine the vertical location of local subsidence.

4.8-6(d) If shallow/intermediate aquifer monitoring or subsidence monitoring indicate that campus water use from the intermediate aquifer is contributing to a net deficit in aquifer volume and/or significant subsidence, the campus will reduce use of water from the aquifer by using surface water and/or treated wastewater effluent to irrigate campus recreation fields.

4.8-6(e) The campus shall incorporate the following or equally effective measures into project designs under the 2003 LRDP where feasible, to increase percolation and infiltration of precipitation into the underlying shallow/intermediate aquifers:

(i) Minimize paved surfaces.

(ii) Use grassy swales, infiltration trenches, or grass filter strips to intercept storm water runoff.

(iii) Implement LRDP Mitigation 4.8-2(b), which specifies construction of detention and infiltration facilities in those areas that do not discharge storm water to the Arboretum.

4.8-12 The campus shall implement LRDP Mitigation 4.8-4(a) and (b) to minimize the potential for degradation of receiving water quality.

4.8-13(a) Implement LRDP Mitigation 4.8-5(a-d).

4.8-13(b) The City of Davis is expected to implement measures to reduce the amount of water withdrawn from the deep aquifer consistent with policies adopted in its General Plan.

- Give priority to demand reduction and conservation over additional water resource development (Policy WATER 1.1)
- Require water conserving landscaping (Policy WATER 1.2)
- Provide for the current and long-range water needs of the Davis Planning Area, and for protection of the quality and quantity of groundwater resources (Policy WATER 2.1)

2003 LRDP EIR Mitigation Measures HYDROLOGY & WATER QUALITY	
	• Manage groundwater resources so as to preserve both quantity and quality (Policy WATER 2.2) • Research, monitor and participate in issues in Yolo County and the area of origin of the City's groundwater that affect the quality and quantity of water (Policy WATER 4.1)
4.8-14(a)	The campus should implement LRDP Mitigation 4.8-6(a-e) to minimize its withdrawal from the shallow/intermediate aquifer and maximize the potential for infiltration.
4.8-14(b)	Consistent with current water planning policies, the City of Davis is expected to implement measures to reduce impervious surfaces and reduce the amount of water withdrawn from the shallow/intermediate aquifer, consistent with, but not limited to, the water policies listed in LRDP Mitigation 4.8-13(b).

7.9.4 Environmental Checklist and Discussion

HYDROLOGY & WATER QUALITY Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☑	☐	☐
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)?	☐	☐	☑	☐	☐
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?	☐	☐	☐	☐	☑
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?	☐	☐	☐	☐	☑
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?	☐	☐	☐	☐	☑
f) Otherwise substantially degrade water quality?	☐	☐	☑	☐	☐
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?	☐	☐	☐	☐	☑

HYDROLOGY & WATER QUALITY Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☐	☑
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☑	☐
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☐	☑

a,f) **Construction**

The 2003 LRDP EIR found that construction on the campus under the 2003 LRDP would not contribute substantial loads of sediment or other pollutants to storm water runoff (LRDP Impact 4.8-1). Construction projects that involve disturbance of over 1 acre of land are required by law to seek coverage under the NPDES *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit, SWRCB Order No. 2009-0009-DWQ / CAS000002, as amended). To comply with this permit, construction projects disturbing over 1 acre must implement Storm Water Pollution Prevention Plans (SWPPPs), which specify Best Management Practices (BMPs) to reduce the contribution of sediments, spilled and leaked liquids from construction equipment, and other construction-related pollutants to storm water runoff. As the Project's construction-related disturbance area would exceed 1 acre in size, it would be required to submit all permit registration documents (including the SWPPP) to the SWRCB, obtain a waste discharge identification number (WDID) as certification of coverage, and implement the SWPPP during construction activities. The SWPPP identifies which structural and nonstructural BMPs would be implemented, such as sandbag barriers, dust controls, perimeter controls, drain inlet protection, proper construction site housekeeping practices, and construction worker training. This existing requirement is reaffirmed through LRDP Mitigation Measure 4.8-1, included as part of the Project, which requires the campus to implement BMPs to further reduce the less-than-significant construction-related water quality impacts.

Operation

The 2003 LRDP EIR found that campus growth under the 2003 LRDP would increase the discharge of treated effluent from the campus WWTP into the South Fork of Putah Creek, which could exceed waste discharge requirements and degrade receiving water quality (LRDP Impact 4.8-4). However, the Project would not connect to the Campus sanitary sewer system and instead would continue to be served by the City of Davis sanitary sewer collection system. LRDP Mitigation 4.8-4(a) and 4.8-4(b), which relate to the Campus' WWTP, are therefore not applicable to the Project. The collection system includes 156 miles of sewer pipelines ranging in diameter from six inches to sixty-six inches. In addition, the City has six sewer lift stations in its service area to facilitate the flow of waste water to the Water Pollution Control Plan (WPCP). The WPCP has a permitted average dry weather flow design capacity of 7.5 million gallons per day (MGD) and a peak wet weather flow of 12.6 MGD (City of Davis 2012).

The Project is not expected to substantially increase the maximum flow of wastewater from the existing condition. Although the student population will increase, it is anticipated that required compliance with the most recent version of the California Building Code (including plumbing code requirements for low flow fixtures) and LEED designation of Gold or higher will achieve sufficient savings to result in no change to wastewater flow. As there would be no on-site wastewater treatment (it would be sent to the

City's collection system), and the Project would not appreciably affect the quality or quantity of effluent to be treated by the City's WPCP, there would be no impact with regard to violating water quality standards or waste discharge requirements applicable to wastewater.

With regard to long-term impacts on the quality and quantity of stormwater runoff, the Project would not have a significant impact. Although the total building square footage will increase, the total amount of impervious surfaces on the site is not expected to significantly increase. The development will be subject to the most recent standards and performance criteria contained in the *Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems* (Small MS4 General Permit). Both the City of Davis and UC Davis are subject to this permit and require development and redevelopment projects to adhere to the Small MS4 Permit and follow published guidance for compliance (City of Davis 2015). These include:

- *Site Design Measures*: Site design measures requires early assessment and evaluation of how site conditions, such as soils, vegetation, and flow paths will influence the placement of buildings and paved surfaces. The evaluation is used to meet the goals of capturing and treating runoff and maximizing opportunities to mimic natural hydrology. Options for site design measures include preserving trees, buffering natural water features, and using green roofs or porous pavement.
- *Source Control Measures:* Source control measures seek to avoid introduction of water quality pollution/degradation altogether. Source control strategies include things like covering refuse/trash areas, properly managing outdoor storage of equipment/materials, minimizing use of pesticides and fertilizers in landscaping, using sumps or special area drains to send non-stormwater discharges to the sewer, ensuring regular grounds maintenance, etc.
- *Treatment Control Measures*: Treatment control measures retain, treat and/or infiltrate the site runoff produced under normal circumstances, controlling both the quality and quantity of stormwater released to the City's conveyance system. In most situations, this means implementing structural BMPs (e.g., infiltration, bioretention and/or rainfall harvest and re-use) to address the volume and rate of runoff produced by 85th percentile storm (i.e., design capture volume).
- *Hydromodification Measures:* Hydromodification measures are required for projects that create or replace one or more acres of impervious surfacing so that post-project runoff shall not exceed the estimated pre-project flow rate for the 2-year, 24-hour storm. Additionally, if the project creates or replaces less than 1 acre of impervious surfaces and the project demonstrates that post-project flows from the site are less than pre-project flows, then no hydromodification measures from Section E.12.e.(ii)(f) from the Phase II Small MS4 General Permit are required.
- *Operation and Maintenance Requirement*: The Small MS4 Permit requires that maintenance agreements stay in place with each property (executed and then recorded with the County Clerk Recorder) to ensure permanent treatment control measures developed on site are properly maintained and/or repaired in accordance with the stormwater quality control plan.

These items must be included in a Stormwater Quality Control Plan to be submitted to the City of Davis. Infiltration testing of site soils done as part of the Webster Hall Replacement Project suggests infiltration BMPs would be feasible to meet the design capture volume (Klienfelder 2016), and other options could include a bioswale. In the event site soils are found to be unsuitable for such measures, other commercial solutions (e.g., filter cartridges and subsurface chambers) would be available to meet the design capture volume.

Given required compliance with City of Davis stormwater design standards and the Small MS4 Permit, the Project would result in beneficial impacts with respect to stormwater quality during operation and maintenance.

Summary

Less-than-significant construction-related impacts of the Project with respect to water quality would be further reduced through implementation of the SWPPP required by the Construction General Permit. Long-term operation and maintenance of the site stormwater treatment control, site design, and source control measures would reduce less-than-significant impacts to receiving water quality through implementation of the Stormwater Quality Control Plan, as required by the Phase II Small MS4 Permit. Therefore, the overall impact of the Project on water quality would be less than significant.

b) The Project is expected to result in no substantial change to water demands and thus would not result in a perceptible/measurable increase in the amount of water pumped from City wells. Furthermore, the City's 2015 UWMP indicates there are no major constraints with regard to groundwater availability (City of Davis 2016b). Both the City of Davis and UC Davis have recently gained the ability to purchase wholesale treated surface water from the Woodland Davis Clean Water Agency, which will allow some of the City's (lower-quality) intermediate aquifer wells to be kept for emergency supply only (City of Davis 2016b). Therefore, the Project would have no impact with respect to depletion of groundwater supplies.

As a redevelopment project with no increase in water demand or impervious surfaces, the Project would have no impact related to groundwater. Therefore, the Project would not contribute to LRDP Impacts 4.8-5, 4.8-6 or Impacts LRDP 4.8-13 and 4.8-14, related to the increases in water extracted from the deep aquifer and the shallow/intermediate aquifer, and reduction of recharge to the deep aquifer and shallow/intermediate aquifer.

As described previously, water supply and groundwater impacts from the Project would be less than significant. While other regional projects may still contribute to the significant and unavoidable cumulative impacts related to groundwater levels, the Project~~'s~~ <u>would not contribute</u> ~~contribution~~ to these significant cumulative impacts ~~would not be cumulatively considerable~~. Regardless, LRDP Mitigation 4.8-5(a-d) and 4.8-6(a-c) included as part of the Project, would require continued utility water conservation efforts, monitoring of the deep and shallow/intermediate aquifers, subsidence monitoring and implementation of measures if the deep aquifer cannot continue to provide for the campus' long-term water needs. Additionally, LRDP Mitigation 4.8-13(a and b) and 4.8-14(a and b) would implement the above measures and would reduce campus and City extractions from the deep and shallow/intermediate aquifers. However, regardless of mitigation, because the effects of increased groundwater extraction are not currently well understood, impacts of increased water use are considered significant and unavoidable (LRDP Impacts 4.8-5, 4.8-6, 4.8-13 and 4.8-14). These impacts were adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5), conditions have not changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

c,d) The project would be designed with treatment control measures to capture the 85th percentile storm event. Although redevelopment would involve minor highly-localized changes in drainage patterns on the site itself, the required implementation of a Stormwater Quality Control Plan and compliance with the Small MS4 Permit means such changes would be beneficial in nature (with regard to both erosion/siltation and flooding). Therefore, no impact would occur.

Impact 4.8-10 of the 2003 LRDP EIR concluded that urban development within the Putah Creek watershed would increase impervious areas and consequently increase stormwater runoff. While mitigation measures requiring compliance with National Pollutant Discharge Elimination System (NPDES) Phase II regulations would protect water quality, implementation of mitigation measures for all projects in the cumulative context cannot be guaranteed by the University of California because it falls within other jurisdictions to enforce and monitor, and the effectiveness of the program in these jurisdictions has not been demonstrated. Therefore, the cumulative impact is significant and unavoidable.

As described previously, the Project would not result in a substantial increase in overall surface runoff and the inclusion of a storm water detention basin would reduce impacts to water quality, flooding, and erosion. Therefore, the contribution of the Project to changes in drainage patterns would not be cumulatively considerable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Because the Project is within the scope of development under the 2003 LRDP and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the Project would not alter this previous analysis or conclusion.

e) The 2003 LRDP EIR found that implementation of the 2003 LRDP would alter drainage patterns in the Project area and would increase impervious surfaces, which could exceed the capacity of storm water drainage systems and result in localized flooding and contribution to off-site flooding (LRDP Impact 4.8-3). As described, the minimal increase in impervious surface and improved on-site storm water controls would result in no, or minimal, increase in surface runoff and related flooding on or off site. The Project would have no impact on flooding in the area.

The 2003 LRDP EIR also found that implementation of the 2003 LRDP in combination with regional development could alter drainage patterns and increase the rate or amount of surface runoff, which could cumulatively exceed the capacity of storm water drainage systems and result in flooding within the Putah Creek watershed (LRDP Impact 4.8-11). In most cases, this flooding would consist of temporary water ponding at storm drain inlets and along roads, and would not result in property damage or other serious consequences. With implementation of LRDP Mitigation 4.8-11, which requires implementation of LRDP Mitigation 4.8-3, the 2003 LRDP EIR concluded that this cumulative impact would be less than significant. As stated previously, the Project would not increase the rate of surface water runoff and would not cumulatively contribute to flooding. Because the Project is within the scope of development under the 2003 LRDP, cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5), and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the Project would not alter this previous analysis or conclusion.

Storm water runoff pollution is evaluated further in items (a, f) and (c).

g,h) Under the 2003 LRDP, housing (including on-campus student housing and housing within the proposed neighborhood) would be constructed outside the 100-year flood zones on the campus (see 2003 LRDP EIR, Figure 4.8-4, 100-Year Floodplain). However, the Project is not located in a 100-year flood zone. Therefore, no impact would occur.

i) The campus is located approximately 23 miles downstream of the Monticello Dam (forming Lake Berryessa) and approximately 15 miles downstream of the Putah Diversion Dam. An inundation study prepared by the U.S. Bureau of Reclamation shows that, in the highly unlikely case of a dam breach, the campus (as well as the City of Davis) would be inundated under a maximum of 3 to 9 feet of water approximately 3.5 to 4 hours following the breach (USBR 1998). However, the probability of such a release is far less than one in one million (USBR 2000). As of June 2000, Monticello Dam was determined to be in satisfactory condition, and the dam exhibited no unusual cracks, seeps, or deformations. In addition, the State Department of Dam Safety evaluates dams regularly, which would give adequate time to respond to any deterioration in the safety of the structure. Therefore, the impact associated with risk of flooding on campus as a result of a dam failure is considered to be less than significant.

j) The campus is not subject to inundation by seiche, tsunami, or mudflow. The campus is generally flat and is not located in close proximity to any large water bodies. Therefore, no impact would occur.

7.10 LAND USE AND PLANNING

7.10.1 Background

Section 4.9 of the 2003 LRDP EIR addresses the land use and planning effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.9 of the 2003 LRDP EIR.

Environmental Setting

Although the Project site is off campus, the 2003 LRDP remains the applicable land use planning guide. The LRDP designates campus lands for the following uses: *Academic and Administrative* (High and Low Density); *Teaching and Research Fields; Teaching and Research Open Space; Parking; Physical Education, Intercollegiate Athletics, and Recreation* (PE/ICA/Recreation); *Research Park* (High and Low Density); *Formal Open Space; Community Gardens; Faculty/Staff Housing, Student Housing; Mixed Use Housing; and Elementary School.*

Project Site

The Project site is designated as *Student Housing* on the 2003 LRDP land use map indicating that the intended long-term use of the Project site is for student housing functions. The Project site would continue to be used for student housing.

The Project site and adjacent residential properties are designated as *Residential High Density* by the City of Davis in its General Plan (City of Davis 2007). The City park to the west of the Project site is designated as *Parks and Recreation*. The Project site is zoned *Residential High Density* by the City zoning ordinance (City of Davis Municipal Code, Chapter 40). The University of California is not subject to the jurisdiction of local land use agencies such as the City of Davis (per Article IC Section 9 of the California Constitution). The campus has a tradition of working cooperatively with the local community and it is University policy to seek consistency with local plans and policies wherever feasible.

7.10.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a land use and planning impact significant if growth under the 2003 LRDP would:

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.
- Result in development of land uses that are substantially incompatible with existing adjacent land uses or with planned uses.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

An additional standard from the CEQA Guidelines Appendix G Environmental Checklist ("a" in the checklist in Section 7.10.4) was found not applicable to campus growth under the 2003 LRDP.

7.10.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP related to land use and planning are evaluated in Section 4.9 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the Project is within the scope of analysis in the 2003 LRDP EIR. The 2003 LRDP EIR did not identify any potentially significant or significant land use and planning impacts. The less-than-significant land use and planning impacts identified in the 2003 LRDP EIR do not require mitigation.

2003 LRDP EIR Impacts LAND USE AND PLANNING		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.9-4	Implementation of the 2003 LRDP, together with the cumulative impacts of other regional growth, would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project that was adopted for the purpose of avoiding or mitigating an environmental effect.	LS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

7.10.4 Environmental Checklist and Discussion

LAND USE & PLANNING Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☐	☑
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?	☐	☐	☐	☐	☑
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☐	☑
d) Result in development of land uses that are substantially incompatible with existing adjacent land uses or with planned uses?	☐	☐	☐	☐	☑

a) The Project would have no potential to physically divide an established community. The Project would demolish an existing three-story residence hall in the Cuarto Residence Hall Area and construct a new residence hall on the site. No impact would occur.

b,d) The applicable land use plan for the campus is the 2003 LRDP. The Project site is designated as *Student Housing* and would continue to be used for student housing. Additionally, the Project is consistent with the City of Davis High Density Residential General Plan land use designation and zoning. No land use change is proposed. No impact would occur.

Impact 4.9-4 of the 2003 LRDP EIR stated that implementation of the 2003 LRDP and the cumulative impacts of other regional growth may result in development and land use planning pressures for other cities in the surrounding region. However, the 2003 LRDP EIR concluded that these cumulative impacts would be less than significant. The Project would demolish the existing Emerson Hall building and replace it with a new residence hall, consistent with the 2003 LRDP land use designations. Because the Project is within the scope of development under the 2003 LRDP, cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5), and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the Project would not alter this previous analysis or conclusion.

c) The campus does not fall within the boundaries of, nor is it adjacent to, an adopted regional HCP or NCCP. The campus has implemented two low effects HCPs for VELB at Russell Ranch. The Project is not located at Russell Ranch and therefore, no impact would occur related to conflict with an applicable HCP or NCCP.

7.11 MINERAL RESOURCES

7.11.1 Background

Section 7.6, Geology, Soils, and Seismicity, of the 2003 LRDP EIR briefly addresses mineral resources issues. The 2003 LRDP EIR concludes that development on the campus would not impede extraction or result in the loss of availability of mineral resources.

Natural gas is the only known or potential mineral resource that has been identified on the campus. Natural gas can be extracted at wells placed considerable distances from deposits. No other known or potential mineral resources have been identified on the UC Davis campus. Therefore, development on the campus would not impede extraction or result in the loss of availability of mineral resources.

7.11.2 2003 LRDP EIR Standards of Significance, Impacts, and Mitigation Measures

Because development on the campus would not impede extraction or result in the loss of availability of mineral resources, the 2003 LRDP EIR did not identify any standards of significance, impacts, or mitigation measures associated with mineral resources. As analyzed in Section 4 of this Initial Study, the Project is within the scope of analysis in the 2003 LRDP EIR.

7.11.3 Environmental Checklist and Discussion

MINERAL RESOURCES Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	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?	☐	☐	☐	☐	☑
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?	☐	☐	☐	☐	☑

a, b) Natural gas is the only known or potential mineral resource that has been identified on the campus and no significant deposits of aggregate resources have been identified in the City of Davis. Natural gas can be extracted at wells placed considerable distances from deposits. Additionally, the Project site is currently developed with the existing Emerson Hall and does not serve as a mineral resource recovery site. Therefore, redevelopment on the Project site would not impede extraction or result in the loss of availability of a known mineral resource and no impact would occur.

7.12 NOISE

7.12.1 Background

Section 4.10 of the 2003 LRDP EIR addresses the noise effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the 'Setting' subsection of Section 4.10 of the 2003 LRDP EIR and provides updated information, as relevant.

Environmental Setting

The primary noise source in the vicinity of the campus is vehicular traffic using I-80, SR 113, and local roads. Other sources of noise include occasional aircraft over-flights associated with the University Airport located on the west campus and another small airport in the vicinity, agricultural activities, railroads, and landscaping activities. Land use surrounding the campus is primarily agricultural, with residential, commercial, and other uses concentrated along the northern and eastern boundaries of the main campus.

Sound is technically described in terms of amplitude and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB), and the decibel scale adjusted for A-weighting (dBA) is a special frequency-dependent rating scale that relates to the frequency sensitivity of the human ear. Community noise usually consists of a base of steady "ambient" noise that is the sum of many distant and indistinguishable noise sources, as well as more distinct sounds from individual local sources. A number of noise descriptors are used to analyze the effects of community noise on people, including the following:

- L_{eq}, the equivalent energy noise level, is the average acoustic energy content of noise, measured during a prescribed period, typically one hour.
- L_{dn}, the Day-Night Average Sound Level, is a 24-hour-average L_{eq} with a 10 dBA "penalty" added to noise occurring during the hours of 10:00 PM to 7:00 AM to account for greater nocturnal noise sensitivity.
- CNEL, the Community Noise Equivalent Level, is a 24-hour-average L_{eq} with a "penalty" of 5 dB added to evening noise occurring between 7:00 PM and 10:00 PM, and a "penalty" of 10 dB added to nighttime noise occurring between 10:00 PM and 7:00 AM.

Noise monitoring over a 24-hour period in 2003 at sites located in urban areas on and adjacent to the campus (including areas next to freeways, roads, residences, and academic buildings) reflected CNEL levels ranging from 63 to 65 dBA CNEL. Ambient noise levels measured over a short period at various urban sites on the campus varied from 49 to 63 dBA L_{eq}.

Project Site

The Project includes demolition and replacement of the existing three-story, 500-student capacity residence hall. Emerson Hall is part of the Cuarto Residence Hall Area, an off-campus student housing area north of the northwestern corner of the central campus. A noise study was conducted by Dudek in December 2017 for the Project, which analyzed the existing noise environment in the Project area. The sound levels were measured at the Project site through both short-term noise measurements and long-term (24 hour) unattended noise measurements.

Short-term measurements were taken on Russell Boulevard, north of Wake Forest Drive, in the park to the west of the Project site, and in the plaza at the entrance of the Dining Hall (see **Figure 6, Noise Measurement Locations**). The results of the short-term measurements are included in the Noise Analysis Memorandum. Three long-term measurements were taken to the south (LT-1,S), north (LT-2,N) and west (LT-3,W) of Emerson Hall (see **Figure 6**). A summary of the long-term noise measurements is included in **Table 7.12-1, Existing Noise Environment.** Two residence halls are located 150 feet south (Thoreau Hall and the under-construction Webster Hall) and additional residences are located 100 feet north (Wake Forest Apartments) and 115 feet east (University Court Apartments) of the Project site; the Cuarto Dining Commons is located about 10 feet to the south. Webster Hall, Thoreau Hall, Wake Forest Apartments, and the University Court Apartments are considered noise sensitive uses, but the Dining Commons is not. Noise levels measured at the Project site were conducted during fall session. A copy of the Noise Analysis Memorandum is included in Appendix D.

Sound levels from roadway traffic in the vicinity of the Project site were also measured. As shown in **Table 7.12-2, Measured Traffic Sound Levels**, the traffic sound levels ranged from 54 to 67 dBA $L_{eq,}$ with higher levels at locations with unobstructed exposure to the roadway traffic source.

Table 7.12-1
Existing Noise Environment

Measurement Location	Location Description	A-Weighted Level (dBA) L_{eq} 9 p.m.-7 a.m.	A-Weighted Level (dBA) L_{eq} 7 a.m.-9 p.m.	CNEL	Ldn
LT-1,S	Near Northwestern Corner of Thoreau Hall	53	57	61	60
LT-2,N	Near Wake Forest Apartments	54	59	62	62
LT-3,W	In Park West of the Project Site	52	54	59	59

Source: Dudek 2017, See Appendix D.

Table 7.12-2
Measured Traffic Sound Levels

Site	Description	Date/Time	L_{eq}[1]	Cars	M[2]	Bus[3]
Russell Blvd	3 ft. from edge of pavement	8/1/2016 3:25 to 3:35 p.m.	66.5 dBA	193	0	0
ST1: Wake Forest Drive	19 ft. from the edge of the nearest driving lane, Northern end of Wake Forest Drive above Project site	11/29/2017 1:30 to 1:40 p.m.	56.9	16	0	0
ST2: Behind Dining Hall/Construction Noise	To the east of the Dining Hall in Parking Lot	11/29/2017 1:48 to 1:58 p.m.	61.6	N/A	N/A	N/A
ST3: Plaza in Front of Existing Emerson and Dining Hall	Plaza at entrance of Dining Hall	11/29/2017 2:00 to 2:10 p.m.	54.0	N/A	N/A	N/A

Source: Dudek 2017, See Appendix D.
Notes: 1 Equivalent Continuous Sound Level (Time-Average Sound Level)
2 Motorcycles
3 Buses

7.12.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a noise impact significant if growth under the 2003 LRDP would result in the following:

- Exposure of persons to or generation of noise levels in excess of levels set forth in **Table 7.12-3, Thresholds of Significance for Noise Evaluations**, of the 2003 LRDP EIR.
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- For a project 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, exposure of people residing or working in the project area to excessive noise levels.

Table 7.12-3
Thresholds of Significance for Noise Evaluations

Noise Source[a]	Criterion Noise Level[b]	Substantial Increase in Noise Level[b]
Road Traffic and Other Long-Term Sources	65 dBA CNEL	>=3 dBA if CNEL w/project is >= 65 dBA >=5 dBA if CNEL w/project is 50–64 dBA >=10 dBA if CNEL w/project is < 50 dBA
Construction (temporary)	80 dBA $L_{eq\ (8h)}$[c] daytime (7:00 a-7:00 p) 80 dBA $L_{eq\ (8h)}$ evening (7:00 p-11:00 p) 70 dBA $L_{eq\ (8h)}$ nighttime (11:00 p-7:00 a)	Not Applicable

Source: 2003 LRDP EIR

[a] The 2003 LRDP would not substantially increase rail activity; therefore, a threshold of significance for rail noise is not included in this table.

[b] At noise-sensitive land use unless otherwise noted. Noise-sensitive land uses include residential and institutional land uses.

[c] $L_{eq(8h)}$ is an average measurement over an eight-hour period.

SOURCE: USDA NAIP Imagery (2016); Yolo County GIS

DUDEK

0 100 200 Feet

FIGURE 6

Noise Measurement Locations

UC Davis Emerson Hall Project

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7.12.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP related to noise are evaluated in Section 4.10 of the 2003 LRDP EIR. The Project is within the scope of analysis in the 2003 LRDP EIR and significant and potentially significant noise impacts identified in the 2003 LRDP EIR that are relevant to the Project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR.

2003 LRDP EIR Impacts NOISE		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.10-1	Construction of campus facilities pursuant to the 2003 LRDP could expose nearby receptors to excessive groundborne vibration and airborne or groundborne noise.	PS	LS
4.10-2	Implementation of the 2003 LRDP would result in increased vehicular traffic on the regional road network, which would substantially increase ambient noise levels at some locations.	S	SU
4.10-5	The 2003 LRDP development in combination with other regional development would increase ambient noise levels.	S	SU

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the Project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the Project description and will not be readopted in this Initial Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

2003 LRDP EIR Mitigation Measures

NOISE

4.10-1 Prior to initiation of construction, the campus shall approve a construction noise mitigation program including but not limited to the following:

- Construction equipment shall be properly outfitted and maintained with feasible noise-reduction devices to minimize construction-generated noise.
- Stationary noise sources such as generators or pumps shall be located 100 feet away from noise-sensitive land uses as feasible.
- Laydown and construction vehicle staging areas shall be located 100 feet away from noise-sensitive land uses as feasible.
- Whenever possible, academic, administrative, and residential areas that will be subject to construction noise shall be informed a week before the start of each construction project.
- 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.
- 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 breaks, Christmas break, Spring break, or Summer break.

2003 LRDP EIR Mitigation Measures NOISE	
	• Loud construction activity within 100 feet of a residential or academic building shall be restricted to occur between 7:30 AM and 7:30 PM.
4.10-2(a)	For noise-sensitive uses adjacent to Russell Boulevard between Arlington Boulevard and Arthur Street, the existing soundwall (approximately 6.5 feet in height) could be increased slightly in height and extended to include the daycare center to the east. For noise-sensitive uses adjacent to Russell Boulevard between Arthur Street and SR 113, and from SR 113 to La Rue/Anderson Road and from La Rue Road to Oak Street, soundwalls may be constructed for exterior residential and recreational land uses within approximately 100 feet of the centerline of Russell Boulevard, where construction of such walls would not interfere with driveway access. The campus shall reimburse the City of Davis the campus' fair share of the cost of a City of Davis' noise abatement program for reducing interior noise levels in homes along Russell Boulevard that are significantly affected by noise from 2003 LRDP-related traffic growth. The campus' contribution to the City's noise abatement program could be used to extend sound walls as described above or for other noise abatement measures such as retrofit of homes. The campus' fair share shall be determined based on the volume of traffic added to Russell Boulevard by the campus as a result of 2003 LRDP implementation and the percentage that 2003 LRDP-related traffic increases constitute of the average daily traffic on the roadway.
4.10-2(b)	For components of the 2003 LRDP having future noise-sensitive land uses such as the Neighborhood and Research Park, building and area layouts shall incorporate noise control as a design feature; including increased setbacks, landscaped berms, and using building placement to shield noise-sensitive exterior areas from direct roadway views.
4.10-5	Implement LRDP Mitigations 4.10-1 and 4.10-2.

7.12.4 Environmental Checklist and Discussion

NOISE Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
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?	☐	☐	☐	☑	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☑	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☑	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐	☐

NOISE Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
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 expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☐	☑

a,c) The Project would generate noise during the demolition/construction phase and during the operational phase. Noise during demolition/construction is addressed in item (b,d).

Existing noise levels range from 59 to 62 dBA CNEL, which is below the acceptable threshold of 65 dBA CNEL (see Appendix D). Noise sources from the Project would include noise from residents and noise from mechanical equipment (cooling motors and ventilation fans). The new building is expected to contain modern equipment to replace the existing equipment. The existing mechanical equipment is placed on the roof and based on observations during the site visit conducted on November 29, 2017, the Emerson Hall mechanical equipment did not have significant noise levels at the ground level on the Project site, compared with other noise sources such as traffic and other mechanical equipment. Other mechanical equipment in the vicinity is servicing the Dining Commons located south of the Project site. Therefore, operational noise from the Project is expected to be no greater than the existing noise levels at the Project site.

Impact 4.10-2 indicates that Implementation of the 2003 LRDP would result in increased vehicular traffic on the regional road network, which would substantially increase ambient noise levels at some locations. Table 7.12-2 shows the current traffic noise levels near the Project Site. The sound levels range from 54 to 66.5 dBA. The exterior noise exposure criterion for residential structures, including apartments and dormitories, is 65 dBA L_{dn}. Only the measurements at Russell Blvd. exceed this standard. It is anticipated that the distance, and the completed Webster Hall will reduce the traffic noise to an acceptable level. The Project would not substantially increase vehicle trips to the area as student vehicles are not allowed in university residence hall housing developments, and Project parking would not be increased (and would likely be reduced). Therefore, the Project would not significantly increase traffic noise levels.

Impact 4.10-5 of the 2003 LRDP EIR recognized that development under the 2003 LRDP in combination with other regional development would cumulatively increase ambient noise levels. Cumulative development would increase the number of people in the region and associated motor vehicle noise. LRDP Mitigation Measure 4.10-5 requires the application of LRDP Mitigation Measure 4.10-2, which includes recommended noise control measures to mitigate for noise generated by vehicle traffic. The 2003 LRDP EIR found that, with mitigation, the cumulative impact associated with motor vehicle noise would be significant and unavoidable. As described previously, the Project would have a less than significant impact on ambient noise levels and therefore the Project's contribution to this significant cumulative impact would not be cumulatively considerable. The significant cumulative impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5), conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

b,d) The nearest sensitive receptors are the Wake Forest Apartments located 100 feet to the north of the footprint of the Project. Additional sensitive receptors are located at the University Court Apartments 115 feet east of the Project site, and Webster and Thoreau Halls located 150 feet to the south of the Project site. The existing Emerson Hall is a wood-frame building and would not require any unusual demolition techniques. Construction of the Project would not require unusual construction techniques such as pile driving, or blasting. The 2003 LRDP EIR found that construction of campus facilities pursuant to the 2003 LRDP could expose nearby receptors to excessive groundborne vibration and airborne or groundborne noise (LRDP Impact 4.10-1). Construction under the 2003 LRDP, including the Project, would require temporary construction activities using conventional construction techniques and equipment that would not generate substantial levels of vibration or groundborne noise. Routine noise levels from conventional construction activities (with the normal number of equipment operating on the site) range from 75 to 86 dBA Leq at a distance of 50 feet, from 69 to 80 dBA Leq at a distance of 100 feet, from 55 to 66 dBA Leq at a distance of 500 feet, and 48 to 60 dBA Leq at a distance of 1,000 feet (although noise levels would likely be lower due to additional attenuation from ground effects, air absorption, and shielding from miscellaneous intervening structures). Noise from Project construction was modeled using the Federal Highway Administration (FHWA) Roadway Construction Noise Model. Based on this modeling, temporary construction noise at the dining hall immediately south of the Project site would be above the significance criteria of 80 dBA Leq daytime and evening. The results of the construction noise modeling are summarized in **Table 7.12-4, Construction Noise at Receivers**.

Table 7.12-4
Construction Noise at Receivers

Case Description:	**$L_{eq(8hr)}$ (dBA)**				
	R1 - Thoreau Hall 150'	*R2 - Webster Hall 150'*	*R3 - Wake Forest Apt. 100'*	*R4 - University Court Apt. 115'*	*R5 - Dining Commons 10'*
Demolition	75	75	79	78	98
Site Preparation	74	74	79	78	98
Grading	74	74	79	78	98
Paving	72	72	75	74	97
Building Construction	72	72	75	74	93
Architectural Coating	72	72	75	74	88

Notes: See Appendix D.

Temporary construction noise is predicted to be highest at the path between the Dining Commons and the Project site. Since this location is not a noise sensitive receptor and the other modeled location have expected construction noise levels below 80 dBA Leq(8hr), the impact is considered less than significant. LRDP Mitigation 4.10-1, included in the Project, would reduce construction noise by requiring that loud construction activity within 100 feet of residential buildings occur only between 7:30 AM and 7:30 PM and not occur during finals week. When feasible, loud construction activity would be scheduled during holidays when students would not be studying or would not be on the campus.

The 2003 LRDP EIR also recognized that development under the 2003 LRDP in combination with other regional development would cumulatively increase ambient noise levels associated with construction (LRDP Impact 4.10-5). Cumulative development would increase the number of people in the region who would be exposed to temporary construction-related noise. LRDP Mitigation 4.10-5, included as part of the Project, would require application of the recommended noise control measures detailed in LRDP Mitigation 4.10-1. The 2003 LRDP EIR found that, with this mitigation, the cumulative impact associated with construction noise would be less than significant. Because the Project is within the scope of development under the 2003 LRDP, cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5) and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the Project would not alter this previous analysis or conclusion.

e) The Project site is 1.6 miles northeast of the University Airport. The 2003 LRDP, including the Project, does not propose changes to University Airport operations, nor does it propose occupied uses within the airport's 65 CNEL noise contour. Therefore, the Project would not expose people to excessive noise levels associated with this public use airport. There would be no impact.

f) The nearest airport, University Airport, is a public use airport. No private airport facilities are within the immediate vicinity of the campus. No impact would occur. Refer to item (e) for discussion of potential noise impacts associated with the campus' public use airports.

7.13 POPULATION AND HOUSING

7.13.1 Background

Section 4.11 of the 2003 LRDP EIR addresses the population and housing effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the 'Setting' subsection of Section 4.11 of the 2003 LRDP EIR.

The on-campus population at UC Davis includes students, faculty/staff, and non-UC Davis affiliates working on campus. The current and projected campus population figures are presented in the Project description of this Tiered Initial Study. As of 2003, approximately 80% of the student population and 50% of the employee population lived in the Davis area, and approximately 94% of students and 90% of employees lived within the three-county area of Yolo, Solano, and Sacramento Counties. Outside the City of Davis, the predominant residence locations of students and employees are Woodland, West Sacramento, Winters, Dixon, Vacaville, and Fairfield (UC Davis ORMP 2003).

Vacancy rates in the City of Davis are considered low, and housing costs in the City are generally higher than those elsewhere in the region. Since 1994, the campus has been working toward the goals of maintaining a UC Davis housing supply that can accommodate 25% of the on-campus enrolled students and can offer housing to all eligible freshmen. The 2003 LRDP focuses on providing additional on-campus student housing that will accommodate a total of approximately 7,800 students on the core campus (or 26% of the peak student enrollment through 2015–2016) and an additional 3,000 students in a west campus neighborhood. The campus currently offers one faculty and staff housing area (Aggie Village), which includes 21 single-family units (17 of which have cottages) and 16 duplexes. The 2003 LRDP plans to provide an additional 500 faculty and staff housing units within the west campus neighborhood.

Project Site

The three-story building on the Project site, Emerson Hall, currently provides housing for up to 500 students. Webster Hall, currently in construction, would house 369 beds (estimated completion Fall 2019), an increase of 104 over the previous 265-bed capacity. Thoreau Hall houses 225 students. The Cuarto Dining Commons provides on-site food service for residents, and can accommodate the planned build out of Cuarto.

5.13.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers an impact related to population and housing significant if growth under the 2003 LRDP would:

- Directly induce substantial population growth in the area by proposing new housing and employment.
- Create a demand for housing that could not be accommodated by local jurisdictions.
- Induce substantial population growth in an area indirectly (for example, through extension of roads or other infrastructure).

Additional standards from the CEQA Guidelines Appendix G Environmental Checklist ("b" and "c" in the checklist in Section 7.13.4) were found not applicable to campus growth under the 2003 LRDP.

7.13.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP related to population and housing are evaluated in Section 4.11 of the 2003 LRDP EIR. As discussed in Section 7.13.4, the Project will not impact population levels. For this reason, mitigation measures identified in the 2003 LRDP EIR are not relevant to the Project.

2003 LRDP EIR Impacts POPULATION AND HOUSING		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.11-3	Implementation of the 2003 LRDP and other regional development would not create a demand for housing that could not be accommodated by local jurisdictions.	LS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

7.13.4 Environmental Checklist and Discussion

POPULATION & HOUSING Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
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)?	☐	☐	☐	☐	☑
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☐	☑
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑	☐
d) Create a demand for housing that cannot be accommodated by local jurisdictions?	☐	☐	☐	☑	☐

a) The Project would increase the residential population on the Project site and campus by providing housing for an additional 200–300 students adjacent to the central campus. The Project would allow more of the existing students to live in established off-campus student housing rather than living in apartments or houses in the City of Davis or in surrounding communities.

The 2003 LRDP EIR found that implementation of the 2003 LRDP, including the Project, would not induce substantial population growth in the area indirectly through the extension of roads or other infrastructure because these extensions would not be provided with excess capacity in an area where lack of infrastructure is an obstacle to growth. The Project would not provide infrastructure to any new destination or service area. No impact would occur.

b,c) The Project would not permanently displace any existing housing. Upon its completion, the Project would increase the amount of available student housing by 200–300 beds. The student housing expansions in recent years have increased the overall availability of on- and off-campus housing so that current and future students have more available housing than existed a few years ago. During the demolition and construction phase of the Project, 350 existing beds would be unavailable. This may result in a temporary shortfall of up to 100 beds. If necessary, a bed shortfall can be accommodated by configuring additional triple capacity rooms in Webster Hall and additional capacity in Tercero. Therefore, the overall capacity of campus student housing would not drop below current levels, and no students who would normally receive campus housing would be displaced. No impact would occur.

d) The Project would not increase student enrollment, faculty, or staff and would therefore not create a demand for housing in and of itself. No impact would occur.

Impact 4.11-3 of the LRDP EIR concluded that development under the 2003 LRDP, in conjunction with other development in the region, would not result in significant cumulative impacts related to housing demand. As described previously, the Project would not induce population growth, increase student enrollment, or permanently displace existing housing. Because the Project is within the scope of development under the 2003 LRDP, cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR, and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the Project would not alter this previous analysis or conclusion.

7.14 PUBLIC SERVICES

7.14.1 Background

Section 4.12 of the 2003 LRDP EIR addresses the public services effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.13 of the 2003 LRDP EIR, and provides updated information, as appropriate.

In accordance with the CEQA Guidelines, the public services analysis below evaluates the environmental effects associated with any physical changes required to meet increases in demand for public services, including police, fire protection, schools, and libraries. Project-level public services impacts are addressed by evaluating the effects of the increased population on public services that directly serve the Project site and its residents. Cumulative public services impacts are addressed by evaluating the effects of off-campus population growth on the public services in the Cities of Davis, Dixon, Winters, and Woodland.

UC Davis provides most public services needed on the campus, including fire protection, police protection, and library services. Since the Project is located off-campus, police and fire protection would be provided by the City of Davis. The Davis Joint Unified School District (DJUSD) serves the City of Davis and portions of Yolo and Solano counties. These services are discussed further below:

- **Fire Protection:** The Davis Fire Department (DFD) provides primary fire response and prevention, natural disaster response, hazardous materials incident response, and emergency medical services to the City of Davis. The DFD has mutual aid agreements with the UC Davis Fire Department, the City of Dixon to the south, Woodland to the north, and West Sacramento to the east. The DFD operates three fire stations; the closest fire station to the Project site is Station 31 located at 530 Fifth Street, approximately 1.12 miles east of the Project site. The DFD is staffed by a Fire Chief, Deputy Chief, three Division chiefs, nine captains and 24 firefighters. The DFD has no adopted standard for firefighting staff but the General Plan goal for provision of fire and emergency medical services is the ability to reach all areas of the City within a five minute emergency response time, 90% of the time (City of Davis 2007).

- **Police:** Law enforcement services are provided to the Project site by the Davis Police Department (DPD). The DPD is located at 2600 Fifth Street, approximately 2.38 miles east of the Project site. The DPD has a mutual aid agreement with the UC Davis Police Department as well as with neighboring cities such as Woodland and West Sacramento. The DPD has a current authorized force of 61 sworn officers and 34 civilian employees who serve a community of 66,742 residents (DPD 2016). The General Plan goal for provision of police services is the ability to reach all areas of the City within a five-minute emergency response time, 90% of the time (City of Davis 2007).
- **Schools:** In 2001–2002, a total of approximately 8,677 students were enrolled in the DJUSD's nine elementary schools, two junior high schools, one high school, one continuation high school, and one independent study program. The DJUSD estimates student enrollment based on a rate of 0.69 student per single-family residential unit and 0.44 student per multi-family residential unit in its service area. Since 2003, enrollment has decreased slightly with a total enrollment of 8,539 students in the 2013–2014 academic year (Ed-Data 2014).
- **Libraries:** UC Davis currently has four main libraries, distributed among the academic centers of the central campus, which serve students, faculty, staff, and the general public, including Shields Library (the main campus library located centrally on the core campus), the Carlson Health Sciences Library, the Law Library, and the Physical Sciences and Engineering Library. The Davis library, a branch of the Yolo County Library, is located in the City of Davis.

Project Site

The Project site currently is developed with a three-story student residential hall housing 500 students.

7.14.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a public services impact significant if growth under the 2003 LRDP would:

- Result in substantial adverse physical impacts associated with the provision of 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.

Effects associated with recreation services are evaluated in Section 7.15, Recreation, and effects associated with the capacity of the domestic fire water system to provide adequate fire protection are evaluated in Section 7.17, Utilities and Service Systems.

7.14.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on public services are evaluated in Section 4.12 of the 2003 LRDP EIR. As discussed in Section 7.14.4, the Project would not impact public services. For this reason, mitigation measures identified in the 2003 LRDP EIR are not relevant to the Project.

7.14.4 Environmental Checklist and Discussion

PUBLIC SERVICES Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
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?	☐	☐	☐	☑	☐
ii) Police protection?	☐	☐	☐	☑	☐
iii) Schools?	☐	☐	☐	☐	☑
iv) Parks?	☐	☐	☐	☑	☐
v) Other public facilities?	☐	☐	☐	☑	☐

a,i and ii) **Fire and Police Protection**

Fire and police services are provided to the Project site by the City of Davis. UC Davis campus police will also respond to service calls at the University owned facility. The Project would increase the number of students living in the off-campus housing building by 200–300. These students would otherwise live in the City of Davis or nearby communities where they would be served by local fire and police. The Project would not increase the enrollment at UC Davis or the regional population levels. Therefore, the impact to police and fire services would be less than significant.

a, iii) **Schools**

The Project site provides off-campus dorm style housing to university students and is not expected to generate any school-age children that would require services from the DJUSD. No impact would occur.

a, iv) Effects associated with parks are evaluated in Section 7.15, Recreation.

a, v) **Libraries**

Students living on the Project site are anticipated to utilize the library services offered by UC Davis. The Project would increase the off-campus residential population by 200–300 students but would not increase the overall campus population. No noticeable increase in the utilization of local public libraries is expected. Therefore, the impact to library services would be less than significant.

Cumulative Impacts

The LRDP-related off-campus population, in conjunction with other regional development, would contribute to increased demands for public services in Davis, Dixon, Woodland, and Winters. New population in these communities would not be added at one time, but over the life of the 2003 LRDP. The LRDP-associated population would contribute to the growth anticipated by each jurisdiction in its respective General Plan. Implementation of the 2003 LRDP, in conjunction with regional growth, could generate a cumulative demand for new or expanded police and fire service facilities in the region, the construction of which could result in significant and unavoidable adverse environmental impacts to prime farmland and habitat (Impact 4.12-6). Implementation of the 2003 LRDP, in conjunction with cumulative growth in the region, would increase demand for school facilities; construction of new schools in the Cities of Davis, Winters, Dixon, and Woodland could result in development of agricultural areas, which could result in the significant and unavoidable loss of prime farmland and habitat (Impact 4.12-7). Impact 4.12-8 determined that the campus population in general would result in a less-than-significant cumulative impact on regional libraries because campus-related population would have easy access to the campus libraries. The Project's contribution to the two significant cumulative impacts would not be cumulatively considerable, as the Project would not increase the enrollment at UC Davis or the regional population levels, students living in the Project housing would otherwise live in the City of Davis or nearby communities where they would already be served by local fire and police, and the off-campus dorm style housing is not expected to generate any school-age children that would require services from the DJUSD.

These cumulative impacts were adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Because the proposed Project is within the scope of development under the 2003 LRDP, cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR, and existing conditions related to public services have not changed substantially since preparation of the 2003 LRDP EIR, the Project would not alter the previous analysis or conclusions.

7.15 RECREATION

7.15.1 Background

Section 4.13 of the 2003 LRDP EIR addresses the environmental effects associated with modifying recreational resources to meet campus growth under the 2003 LRDP. The following discussion summarizes information presented in the 'Setting' subsection of Section 4.13 of the 2003 LRDP EIR.

UC Davis contains many park-like areas and recreation facilities. Park facilities at UC Davis range in size from small picnic and landscaped areas within campus housing areas to extensively landscaped areas in the academic core of the central campus, such as the Arboretum. Areas such as the Quad, the landscaped areas along A Street and Russell Boulevard, the Putah Creek Riparian Reserve in the west campus, and many areas within the Arboretum are used regularly by members of the UC Davis campus and visitors to the campus.

Recreation facilities on the campus include structures, bike paths, and fields used for physical education, intercollegiate athletics, intramural sports, sports clubs, and general recreation. Recreation structures include Hickey Gym, Recreation Hall, the Recreation Swimming Pool, Recreation Lodge, Activities and Recreation Center, and the Schaal Aquatic Center. The general public may purchase privilege cards to use some campus recreation facilities, or may join community or campus organizations that have access to some facilities.

Project Site

The Project site is an established off-campus student housing area adjacent to the UC Davis central campus. Oxford Circle Park, a City park, is located to the west of the Project site. The park is primarily passive open space, but includes two BBQs and picnic tables.

7.15.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a recreation impact significant if growth under the 2003 LRDP would:

- Increase the use of existing neighborhood and regional parks or other recreation facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Propose the construction of recreation facilities or require the expansion of recreation facilities, which might have an adverse physical effect on the environment.

7.15.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP associated with recreation are evaluated in Section 4.13 of the 2003 LRDP EIR. As discussed in Section 7.15.4, the Project will not impact recreation resources.

2003 LRDP EIR Impacts RECREATION		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.13-2	Implementation of the 2003 LRDP, together with the cumulative impacts of other regional development, could increase the use of off-campus recreation facilities, the development of which could result in significant environmental impacts.	S	SU

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the Project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the Project description and will not be readopted in this Initial Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

2003 LRDP EIR Mitigation Measures RECREATION	
4.13-2	If documented unmitigated significant environmental impacts are caused by the construction of recreation facilities in the Cities of Dixon, Woodland, and/or Winters that are needed in part due to implementation of the 2003 LRDP, UC Davis shall negotiate with the appropriate local jurisdiction to determine the campus' fair share (as described in Section 4.12.2.3) of the costs to implement any feasible and required environmental mitigation measures so long as the unmitigated impacts have not been otherwise reduced to less-than-significant levels through regulatory requirements, public funding, or agreements. This mitigation measure shall not apply to any other costs associated with implementation of recreation facilities.

7.15.4 Environmental Checklist and Discussion

RECREATION Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
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?	☐	☐	☐	☑	☐
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?	☐	☐	☐	☑	☐

a,b) The Project would increase the resident population in the off-campus student housing building by 200–300 students. Some additional use of Oxford Circle Park may occur. However, the off-campus student housing is designed for students already attending UC Davis. UC Davis students have access to a variety of recreational facilities on campus. Additionally, the campus increases maintenance of existing recreational facilities to counteract the increase in demand to prevent deterioration of on campus recreational facilities. Therefore, the increase in demand would not result in deterioration of on or off campus recreational facilities.

The Project would not demolish existing recreational facilities and would not construct new recreational facilities. The Project would remove an existing swimming pool. However, this small pool is more of a building amenity than a neighborhood recreational facility. UC Davis maintains expansive aquatic recreational facilities, including the Recreation Pool and Hickey Pool, available to all students. No impact would occur.

The LRDP-related population would place a demand on recreation facilities in Davis, Dixon, Winters, and Woodland, which would combine with effects stemming from other regional growth. Depending on specific park and recreation sites, development of recreation facilities to meet additional demands was determined in the 2003 LRDP EIR to result in potential impacts such as loss of prime farmland or loss of valuable habitat (LRDP Impact 4.13-2). The 2003 LRDP EIR concluded that it would be speculative for that EIR to arrive at the conclusion that the impacts would be less than significant. Therefore, the 2003 LRDP EIR concluded that the environmental impacts from the development of recreation facilities triggered by the cumulative demand in the region would be significant and unavoidable even with implementation of LRDP Mitigation 4.13-2. The Project's contribution to this significant cumulative impact would not be cumulatively considerable, as it would not result in the need to develop new recreational facilities. This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Because the Project is within the scope of development under the 2003 LRDP, cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5) and existing conditions have not changed substantially since preparation of the 2003 LRDP EIR, the Project would not alter this previous analysis or conclusion.

7.16 Transportation and Traffic

7.16.1 Background

Section 4.14 of the 2003 LRDP EIR addresses the transportation, circulation, and parking effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the 'Setting' subsection of Section 4.14 of the 2003 LRDP EIR and provides updated information, as relevant.

Environmental Setting

I-80 and SR 113 provide primary regional roadway access to the campus and the City of Davis.

Access to the campus from the City of Davis is provided primarily from A Street, B Street, First Street, and Russell Boulevard. UC Davis has six main campus roadways or "gateways" that connect the campus to residential and downtown areas in the City of Davis, and two gateways that provide direct access to I-80 and SR 113. Circulation within the central campus is accommodated primarily by the campus "loop" roadway system, which includes Russell Boulevard, A Street, New and Old Davis Roads, California Avenue, and La Rue Road. Other roadways within the core campus area are restricted to transit and emergency vehicles, bicyclists, and pedestrians. Primary vehicular access to the south campus is provided by Old Davis Road, to the west campus by Hutchison Drive, and to Russell Ranch by Russell Boulevard.

Bicycles are a major component of the transportation system at UC Davis and in the City of Davis. UC Davis has an extensive system of bicycle paths, which makes bicycles a popular form of travel on campus. The UC Davis Bicycle Plan (UC Davis 2011) estimates that 15,000 to 20,000 bicycles travel to the campus on a typical weekday during the Fall and Spring sessions when the weather is good. The most recent travel survey indicates that about 46% of UC Davis affiliates or 19,337 people commute by bicycle on a typical weekday (UC Davis 2015).[8]

Parking at UC Davis is provided by a combination of surface lots and parking structures. UC Davis Transportation and Parking Services (TAPS) oversees parking services on campus including selling parking passes, providing traffic control at special events, ticketing violators, and measuring parking utilization throughout campus on a quarterly basis. In the 2014-2015 academic year approximately 24.5% of UC Davis students, staff and faculty purchased a parking permit (UC Davis 2015).

The operations of roadway facilities are described with the term level of service (LOS). The Highway Capacity Manual (HCM) defines LOS as a qualitative measure which describes the operational conditions of a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience. LOS is rated A through F, with LOS A representing the best operating conditions and LOS F representing the worst. LOS is measured during morning (7 to 9 AM) and afternoon (4 to 6 PM) peak commute times. The LOS of campus roadways varies. Monitoring of campus intersections during peak hours in Fall 2001 and Fall 2002 found that the Hutchison Drive/Health Sciences Drive intersection (with LOS E during the PM peak hour) was the only study intersection to operate below the campus' operation standard (standards are identified in the following section) and the campus installed a traffic signal at this intersection in 2006. In addition, the campus completed a roundabout at the intersection of Old Davis Road and South La Rue Road in 2011 to improve LOS (UC Davis 2014). Based on counts conducted in October 2014 for the Nishi Gateway Project the intersection of Russell Boulevard and Sycamore Lane was operating at LOS C in the AM peak hour and LOS B in the PM peak hour (City of Davis 2015b).

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8 Data is based on a weighted sample of 3,507 and a projected population of 42,405.

Project Site

Vehicular access to the Project site is from Oxford Circle and Wake Forest Drive. The Project site includes 41 automobile parking spaces east of the building. On-street parking is available in Oxford Circle and on Wake Forest Drive. North of Wake Forest Drive, on-street parking is restricted by a City permit system (the "P" permit area does not allow non-resident overnight parking, between 2 a.m. and 9 a.m.).

Bicycle parking is located on the south side of the building (capacity of the bicycle racks is approximately 210, but bicycles tend to double up the rack spaces, resulting in more parked bicycles). There is additional bicycle parking in Oxford Circle.

The Project site has direct access to bicycle and pedestrian paths along Oxford Circle and Wake Forest Drive. A bicycle and pedestrian path connecting to the Oxford Circle parking lot provides access to Russell Boulevard and the dedicated bicycle path on the north side of Russell Boulevard. Wake Forest Drive connects to Sycamore Lane, which includes Class II bicycle lanes and connects to the Davis Bike Loop on the south side of Russell Boulevard. A Unitrans bus stop (#181) is located on the northwest corner of the Project site on Wake Forest Drive.

7.16.2 2003 LRDP EIR Standards of Significance

The following standards of significance are based on the 2003 LRDP EIR and standards used by the City of Davis. An impact to transportation/traffic would be considered significant if the Project:

- Conflicts 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.
    - Pursuant to the 2003 LRDP EIR, LOS D is the minimum acceptable LOS for UC Davis intersection.
        - For signalized intersections, deteriorate peak hour intersection operations from an acceptable level (LOS D) to an unacceptable level (LOS E or worse).
        - For unsignalized intersections, deteriorate the average LOS of all movements from an acceptable level (LOS D) to an unacceptable level and meet the California Manual on Uniform Traffic Control Devices (MUTCD) peak hour signal warrant.
        - For signalized and unsignalized intersections that operate unacceptably without the project, the addition of 10 or more vehicles to the intersection's volume.
    - Pursuant to the City of Davis General Plan, LOS E is the minimum acceptable LOS for the City of Davis, LOS F is acceptable for the City for the Davis Core Area (LOS F is acceptable and considered a "congested condition" for Core Area intersections).
        - For signalized intersections, exacerbate unacceptable (LOS F in the weekday AM or PM peak hour; LOS E or F in the Saturday peak hour) operations by increasing an intersection's average delay by five seconds or more.
        - For Core Area intersections that operate at congested conditions (LOS F in the weekday AM or PM peak hour or the Saturday peak hour), exacerbate operations by increasing an intersection's average delay by five seconds or more.
        - For unsignalized intersections that operate unacceptably (LOS F in the weekday AM or PM peak hour; LOS E or F in the Saturday peak hour; and meet

MUTCD's peak hour signal warrant without the project), exacerbate operations by increasing the overall intersection's volume by more than 1%.

- For unsignalized intersections that operate unacceptably but do not meet MUTCD's peak hour signal warrant without the project, add sufficient volume to meet the peak hour signal warrant.

The above significance criteria for City of Davis intersections are consistent with those applied in the Nishi Gateway Project (SCH no. 2015012066), the Second Street Crossing (Target Store) Project Draft Environmental Impact Report (SCH no. 2005062142) and the Covell Village Project Draft Program Level EIR (SCH no. 2004062089).

- Conflicts with an applicable congestion management program, including, but not limited to level of service standards established by the county congestion management agency for designated roads and highways.
- Results 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.
- Substantially increases hazards due to a design feature (e.g., sharp curves or dangerous intersections) incompatible uses (e.g., farm equipment).
- Results in inadequate emergency access.
- Conflicts with applicable adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

7.16.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on transportation and traffic are evaluated in Section 4.14 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the Project is within the scope of analysis in the 2003 LRDP EIR. Significant and potentially significant traffic and circulation impacts identified in the 2003 LRDP EIR that are relevant to the Project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. Mitigation is required to reduce the magnitude of project-level LRDP Impact 4.14-2, but these impacts are identified as significant and unavoidable because mitigation measures at the impacted facilities are under the jurisdiction of other agencies that may elect not to implement the recommended mitigation measures.

2003 LRDP EIR Impacts TRAFFIC AND CIRCULATION		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.14-1	Implementation of the 2003 LRDP would cause unacceptable intersection operations at on-campus intersections.	S	LS
4.14-2	Implementation of the 2003 LRDP would cause unacceptable intersection and freeway LOS operations at off-campus facilities, including facilities contained in the Yolo County and Solano County Congestion Management Plans.	S	SU
4.14-4	Implementation of the 2003 LRDP would increase demand for transit services.	S	LS
4.14-5	Growth in population levels in the core area of the central campus would result in increased conflicts between bicyclists, pedestrians, and transit vehicles, causing increased congestion and safety problems.	S	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the Project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the Project description and will not be readopted. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

2003 LRDP EIR Mitigation Measures

TRAFFIC AND CIRCULATION

4.14-1 a	UC Davis shall continue to actively pursue Transportation Demand Management strategies to reduce vehicle-trips to and from campus.
4.14-1 b	UC Davis shall continue to monitor AM and PM peak hour traffic operations at critical intersections and roadways on campus.
4.14-1 c	UC Davis shall review individual projects proposed under the 2003 LRDP as they advance through the environmental clearance phase of development to determine if intersection or roadway improvements are needed with the additional traffic generated by the proposed project. If intersection operations are found to degrade to unacceptable levels, UC Davis shall construct physical improvements such as adding traffic signals or roundabouts at affected study intersections.
4.14-2 a	UC Davis shall continue to actively pursue Transportation Demand Management strategies to reduce vehicle-trips to and from campus.
4.14-2 b	UC Davis shall continue to monitor AM and PM peak hour traffic operations at critical intersections and roadways in the campus vicinity at least every three years to identify locations operating below UC Davis, City of Davis, Yolo County, Solano County, or Caltrans LOS thresholds and to identify improvements to restore operations to an acceptable level.
4.14-2 c	UC Davis shall review individual projects proposed under the 2003 LRDP as they advance through the environmental clearance phase of development to determine if intersection or roadway improvements are needed with the additional traffic generated by the proposed project. If intersection operations are found to degrade to unacceptable levels, UC Davis shall contribute its fair share towards roadway improvements at affected study intersections.
4.14-4	UC Davis shall monitor transit ridership to identify routes operating over capacity with increased campus growth. UC Davis shall work with transit providers to identify additional service required with campus growth or new transit routes needed to serve future development areas.
4.14-5	UC Davis shall monitor core area pedestrian and bike activity and accidents. UC Davis shall improve bike and pedestrian facilities or alter transit operations to avoid increased bicycle accident rates or safety problems.

7.16.4 Environmental Checklist and Discussion

TRANSPORTATION & TRAFFIC Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
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?	☐	☐	☐	☑	☐

TRANSPORTATION & TRAFFIC Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards established by the county congestion management agency for designated roads and highways?	☐	☐	☐	☑	☐
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?	☐	☐	☐	☐	☑
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☑	☐
e) Result in inadequate emergency access?	☐	☐	☐	☐	☑
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☐	☑

a,b) The Project would not increase the regional population or the student enrollment at UC Davis. The Project would increase the number of off-campus student residents in the Cuarto Residence Hall Area. Student automobiles are not allowed (except by special arrangement) in university residence hall housing developments. Accordingly, the Project would not be expected to substantially increase the volume of traffic on campus roadways and is not expected to result in changes to the performance of the circulation system. With no increase in traffic volumes, the Project would have no effect on the efficiency of roadway or intersection operations. No impact would occur.

On-site parking would meet the needs of visitors, including UC Davis maintenance and administrative staff, and the few students who may have special vehicle arrangements. Transportation surveys indicate that freshmen students living in Davis drive at very low rates. Daily single rider automobile trips to campus from within Davis are only 0.4% for freshmen, with only 3% driving to campus anytime during the week (UC Davis 2015). Undergraduates as a group drive alone to campus at a rate of less than 6% (UC Davis 2015). Therefore, the on-site parking and Oxford Circle parking would be adequate to handle student parking (by non-residents, or students with parking permits). Parking supply is not considered an environmental issue (per CEQA Guidelines Appendix G). In certain circumstances, insufficient parking may cause indirect effects (such as interfering with emergency access). However, due to the low levels of car usage among residence hall occupants and the permitting controls both on site and in the neighborhood, unmet parking demand for Project residents is not anticipated.

The 2003 LRDP EIR traffic analysis considered future conditions (2015) both with and without implementation of the 2003 LRDP. The analysis included consideration of planned transportation improvements as identified in the Metropolitan Transportation Plan for 2025 (Sacramento Area Council of Governments May 2002), also known as the MTP. The MTP is a federally mandated long-range transportation plan for the six-county area that includes El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba Counties. The analysis in Impact 4.14-2 of the 2003 LRDP EIR concluded that implementation of the 2003 LRDP would result in unacceptable intersection and freeway LOS operations at off-campus facilities, including facilities contained in the Yolo County and Solano

County Congestion Management Plans. While mitigation measures would help reduce this impact, it was determined to be significant and unavoidable. The Project's contribution to this significant cumulative impact would not be cumulatively considerable, as the Project would not increase traffic volumes and would have no effect on the efficiency of roadway or intersection operations. This cumulative impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR, conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

c) The Project would not result in a change related to air traffic patterns. Impacts related to safety risks associated with the UC Davis airport are discussed in Section 7.8, Hazards and Hazardous Materials.

d,f) The student population at the site would increase from 500 to 700–800 students as a result of the Project. At UC Davis, the primary modes of transportation for dormitory residents are bicycles and walking. According to the 2014–2015 travel survey, 94% of on-campus residents walk or bike and 4% take transit (UC Davis 2015). Due to the Project's proximity to the core campus, and because residents are not allowed to have vehicles on campus, similar travel patterns are anticipated for Project residents.

In the last 10 years, there have been five recorded collisions at or near the intersection of Wake Forest Drive and Sycamore Lane and one recorded collision on Wake Forest Drive near the Project site. Of those incidents, three involved a bicyclist and one involved a motorcyclist. None of the incidents resulted in fatalities.[9]

In accordance with LRDP Mitigation 4.14-5, UC Davis continues to monitor and improve circulation facilities on campus to avoid safety problems. In 2009, the campus completed the UC Davis Bikeway and Transit Network Study (BTNS) to identify long-term route improvements and facility upgrades for bikes, pedestrians, and transit vehicles. The BTNS final plan identified various improvements to accommodate future utilization increases, including a proposed bike roundabout at Sycamore on the path south of Russell. The Project would not conflict with the BTNS plan and is consistent with the 2003 LRDP.

The existing facilities within the Project boundaries would be demolished, redesigned, and reconstructed as part of the Project. The existing bicycle and pedestrian connections between Oxford Circle would be maintained and improved. Completion of these facilities would provide adequate bike and pedestrian routing. With adequate routing, no hazardous conditions are expected and the provision of these facilities would be consistent with the transportation objectives of the campus.

Facilities adjacent to the Project boundaries would experience higher levels of utilization after completion of the Project. However, recent improvements to the bicycle and pedestrian facilities including a bicycle scramble crossing at Sycamore Lane and Russell Boulevard would accommodate the increased use from the Project.

With recent upgrades, facilities extending away from the Project along heavily travelled corridors to the north, east, south, and west sides of the Project boundary contain adequate facilities for bikes and pedestrians and would not need modification as part of the Project. These include Class II bicycle lanes on Sycamore Lane, Class I paths and Russell (both the northern City side and the University southern side), and connectivity to both the Davis Bike Loop and the central campus bicycle and pedestrian network. Therefore, the Project impact to bicycle and pedestrian facilities would be less than significant.

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9 Data is from the Statewide Integrated Traffic Records System (SWITRS). SWITRS is a database maintained by the California Highway Patrol that serves as a means to collect and process data gathered from a collision scene. The data is mapped online by the Safe Transportation Research and Education Center (SafeTREC) at the University of California, Berkeley. http://tims.berkeley.edu/ (Accessed December 2017.)

e) Impacts related to emergency access are discussed in Section 7.8, Hazards and Hazardous Materials. Roadways would remain open to emergency vehicles during Project construction. No impact would occur.

7.17 UTILITIES AND SERVICE SYSTEMS

7.17.1 Background

Section 4.15 of the 2003 LRDP EIR addresses the effects of campus growth on utility systems under the 2003 LRDP. The campus provides the following utility and service systems to campus projects:

- Domestic/Fire Water
- Utility Water
- Agricultural Water
- Storm Drainage
- Wastewater
- Solid Waste
- Chilled Water
- Steam
- Electricity
- Natural Gas
- Telecommunications

Since the Project site is located outside of the campus boundaries, with the exception of telecommunication and fire alarm systems, major utilities are served by the City of Davis and Pacific Gas and Electric (PG&E). The Project would coordinate with the City of Davis and PG&E to determine that the existing services have the capacity to support any increased loads for the Project.

Project Site

The Project would use City of Davis utilities and service systems, including domestic water, utility water, sanitary sewer, storm drainage, solid waste, electricity, and natural gas. The Project would use campus telecommunications and fire alarm services. These utilities and service systems and connections are discussed below:

- **Domestic Water:** The City of Davis Public Works Department would deliver potable water to the Project site. The City has, until now, used groundwater as its sole water supply source. According the City's 2015 Urban Water Management Plan (UWMP), the City has a projected reasonably available water volume of 26,080 acre-feet per year (AFY) through the year 2040 and a projected water demand of 13,560 AFY though 2035 (City of Davis 2016a). Both the City of Davis and UC Davis have recently gained the ability to purchase wholesale treated surface water from the Woodland Davis Clean Water Agency, which will allow some of the City's (lower-quality) intermediate aquifer wells to be kept for emergency supply only (City of Davis 2016a).

  The Project site is served by City water mains in Wake Forest Drive and Oxford Circle. The firewater final layout and any required hydrant locations would require Davis Fire Department approval.

  Sanitary Sewer: The Project site receives sewer service from the City of Davis. Sewer connections are on the east side of the Project site. The City's Wastewater Treatment Plant (WWTP) is located approximately 6 miles northeast of the City of Davis, immediately east of the Yolo County Landfill. Treated effluent from the WWTP is either discharged to Willow Slough (a tributary of the Yolo Bypass) or sent to 77 acres of constructed wetlands for additional treatment and potential discharge to Conaway Toe Drain. The City WWTP, as regulated under the existing NPDES permit issued by the Central Valley Regional Water Quality Control Board, is rated at an average dry weather flow capacity of 7.5 mgd, with current average flows at approximately 5.3 mgd (City of Davis 2012).

- **Storm Drainage:** The Project would connect to the City of Davis storm water system. The north side drains to a storm drain inlet and manhole at the corner of Wake Forest Drive and Oxford Circle. There are several drainage inlets on the south side of the Project site.
- **Electricity:** Electricity is provided by PG&E from the existing transformer on the east side of the Project site.
- **Natural Gas:** Natural gas service is provided to the Project site by PG&E from a 2-inch main along Oxford Circle in the northwest side of the building.
- **Telecommunications:** The majority of all telephone, data, video, and wireless infrastructure and facilities on campus, and the Cuarto Residence Hall Area, are owned by the campus and operated by the UC Davis Communications Resources Department. The main campus switching facility is located in the Telecommunications Building.
- **Fire Alarm:** The building is connected to the campus fire alarm system via a dedicated phone line.

7.17.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a utilities and service systems impact significant if growth under the 2003 LRDP would:

- Exceed the Central Valley Regional Water Quality Control Board's wastewater treatment requirements.
- Require or result in the construction or expansion of water or wastewater treatment facilities, which would cause significant environmental effects.
- Require or result in the construction or expansion of storm water drainage facilities, which could cause significant environmental effects.
- Result in the need for new or expanded water supply entitlements.
- Exceed available wastewater treatment capacity.
- Be served by a landfill with insufficient permitted capacity to accommodate the Project's solid waste disposal needs.
- Fail to comply with applicable federal, state, and local statutes and regulations related to solid waste.
- Require or result in the construction or expansion of electrical, natural gas, chilled water, or steam facilities, which would cause significant environmental impacts.
- Require or result in the construction or expansion of telecommunication facilities, which would cause significant environmental impacts.

7.17.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP on utilities and service systems are evaluated in Section 4.15 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the Project is within the scope of analysis in the 2003 LRDP EIR. Significant and potentially significant utilities and service systems impacts identified in the 2003 LRDP EIR that are relevant to the Project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. In addition, LRDP Impacts 4.15-1, 4.15-2, 4.15-3, 4.15-6, 4.15-7 are considered less than significant prior to mitigation, but mitigation measures were identified in the 2003 LRDP EIR to further reduce the significance of these impacts.

2003 LRDP EIR Impacts UTILITIES & SERVICE SYSTEMS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.8-5	Campus growth under the 2003 LRDP would increase the amount of water extracted from the deep aquifer and would increase impervious surfaces. This could result in a net deficit in the deep aquifer volume or a lowering of the local groundwater table but would not interfere substantially with recharge of the deep aquifer.	S	SU
4.8-6	Campus growth under the 2003 LRDP could increase the amount of water extracted from the shallow/intermediate aquifer and would increase impervious surfaces. Extraction from the shallow/intermediate aquifer could deplete groundwater levels and could contribute to local subsidence, and increased impervious coverage could interfere substantially with recharge. This could result in a net deficit in the intermediate aquifer volume or a lowering of the local groundwater table.	S	SU
4.15-1	Implementation of the 2003 LRDP would require the expansion of campus domestic/fire water extraction and conveyance systems, which would not cause significant environmental impacts.	LS	LS
4.15-3	Implementation of the 2003 LRDP would require the expansion of wastewater treatment and conveyance facilities, the construction and operation of which would not result in significant environmental impacts.	LS	LS
4.15-5	Implementation of the 2003 LRDP would increase the volume of municipal solid waste that would require disposal, but would not require an expansion of the campus or county landfills.	LS	LS
4.15-10	Implementation of the 2003 LRDP together with other regional development could generate a cumulative demand for wastewater treatment facilities in the region, the construction of which could result in significant environmental impacts on habitat.	S	SU
4.15-11	Implementation of the 2003 LRDP in conjunction with regional development could generate a cumulative demand for water, landfills, energy, and natural gas in the region, but the expansion of associated utilities and service systems to meet this demand would not result in significant environmental effects.	LS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the Project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the Project description and will not be readopted in this Initial Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

2003 LRDP EIR Mitigation Measures UTILITIES & SERVICE SYSTEMS	
4.4-1(a)	During the project planning phase, the campus shall conduct a rare plant survey if the site is previously undeveloped and is in a valley-foothill riparian, open water pond, riverine, wetland or ruderal/annual grassland or habitat. Surveys shall be conducted by qualified biologists in accordance with the most current CDFG/USFWS guidelines or protocols and shall be conducted during the blooming period of the plant species with potential to occur in the area, as listed in Table 4.4-2. If these surveys reveal no occurrences of any species, then no further mitigation would be required.

4.4-1(b) Should surveys determine that special-status plant species are present, measures will be taken to avoid the plants and the associated habitat necessary for long-term maintenance of the population. If avoidance is not feasible the campus will provide off-site compensation at a 1:1 ratio. Off-site compensation will include preservation of existing populations at other sites and/or enhancement of the affected species. The campus will preserve either an equal number of the affected plants or an equal area of the affected species habitat. The campus shall also develop and fund the implementation of a plan to manage and monitor the preserve to ensure the long-term survival of the preserved population.

4.5-1(a) As early as possible in the project planning process, the campus shall define the project's area of potential effects (APE) for archaeological resources and, if structures are present on the site, for historic structures. The campus shall determine the potential for the project to result in cultural resource impacts, based on the extent of ground disturbance and site modification anticipated for the proposed project. Based on this information, the campus shall:

(i) Prepare an inventory of all buildings and structures within the APE that will be 50 years of age or older at the time of project construction for review by a qualified architectural historian. If no structures are present on the site, there would be no impact to historic built environment resources from the project. If potentially historic structures are present, LRDP Mitigation 4.5-1(c) shall be implemented.

(ii) Determine the level of archaeological investigation that is appropriate for the project site and activity, as follows:

• Minimum: excavation less than 18 inches deep and in a relatively small area (e.g., a trench for lawn irrigation, tree planting, etc.). Implement LRDP Mitigation 4.5-1(b)(i).

• Moderate: excavation below 18 inches deep and/or over a large area on any site that has not been characterized and is not suspected to be a likely location for archaeological resources. Implement LRDP Mitigation 4.5-1 (b)(i) and (ii).

• Intensive: excavation below 18 inches and/or over a large area on any site that is within 800 feet of the historic alignment of Putah Creek, or that is adjacent to a recorded archaeological site. Implement LRDP Mitigation 4.5-1 (i), (ii) and (iii).

4.5-1(b) During the planning phase of the project, the campus shall implement the following steps to identify and protect archaeological resources that may be present in the APE:

(i) For project sites at all levels of investigation, contractor crews shall be required 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 item (vi), below.

(ii) For project sites requiring a moderate or intensive level of investigation, a surface survey shall be conducted by a qualified archaeologist during project planning and design and prior to soil disturbing activities. For sites requiring moderate investigation, in the event of a surface find, intensive investigation will be implemented, as per item (iii), below. Irrespective of findings, the qualified archaeologist shall, in consultation with the campus, develop an archaeological monitoring plan to be implemented during the construction phase of the project. The frequency and duration of monitoring shall be adjusted in accordance with survey results, the nature of construction activities, and results during the monitoring period. In the event of a discovery, the campus shall implement item (vi), below.

(iii) For project sites requiring intensive investigation, irrespective of subsurface finds, the campus shall retain a qualified archaeologist to conduct a subsurface investigation of the project site, to ascertain whether buried archaeological materials are present and, if so, the extent of the deposit relative to the project's area of potential effects. If an archaeological deposit is discovered, the archaeologist will prepare a site record and file it with the California Historical Resource Information System.

(iv) If it is determined through step (iii), above, that the resource extends into the project's area of potential effects, the resource will be 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. If the resource does not qualify, or if no resource is present within the project area of potential effects (APE), this will be noted in the environmental document and no further mitigation is required unless there is a discovery during

	construction (see (vi), below).
	(v) If a resource within the project APE 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, the establishment of a preservation easement, or other means that will permit avoidance or substantial preservation in place of the resource. If avoidance or substantial preservation in place is not possible, the campus shall implement LRDP Mitigation 4.5-2(a).
	(vi) If a 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 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 project. LRDP Mitigation 4.5-1(b), steps (iii) through (vii) shall be implemented.
	(vii) A written report of the results of investigations will be prepared by a qualified archaeologist and filed with the appropriate Information Center of the California Historical Resources Information System.
4.8-5(a)	The campus shall continue to implement water conservation strategies to reduce demand for water from the deep aquifer. Domestic water conservation strategies shall include the following or equivalent measures: (i) Install water efficient shower heads and low-flow toilets that meet or exceed building code conservation requirements in all new campus buildings, and where feasible, retrofit existing buildings with these water efficient devices. (ii) Continue the leak detection and repair program. (iii) Continue converting existing single-pass cooling systems to cooling tower systems. (iv) Use water-conservative landscaping on the west and south campuses where domestic water is used for irrigation. (v) Replace domestic water irrigation systems on the west and south campuses with an alternate water source (shallow/intermediate or reclaimed water), where feasible. (vi) Install water meters at the proposed neighborhood to encourage residential water conservation. (vii) Identify and implement additional feasible water conservation strategies and programs including a water awareness program focused on water conservation.
4.15-1(a)	Once preliminary project design is developed, the campus shall review each project to determine if existing domestic/fire water supply is adequate at the point of connection. If domestic/fire water is determined inadequate, the campus will upgrade the system to provide adequate water flow and pressure to the project site before constructing the project.
4.15-1(b)	Implement domestic water conservation strategies as indicated in LRDP Mitigation 4.8-5(a) [see Section 7.9, Hydrology and Water Quality, of this Tiered Initial Study].
4.15-3	Once preliminary project design is developed, the campus shall review each project to determine whether existing capacity of the sanitary sewer line at the point of connection is adequate. If the capacity of the sewer line is determined inadequate, the campus will upgrade the system to provide adequate service to the project site prior to occupation or operation.

7.17.4 Environmental Checklist and Discussion

UTILITIES & SERVICE SYSTEMS Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☑	☐
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?	☐	☐	☐	☑	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☑	☐
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?	☐	☐	☐	☑	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☑	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☑	☐
h) Require or result in the construction or expansion of electrical, natural gas, chilled water, or steam facilities, which would cause significant environmental impacts?	☐	☐	☐	☑	☐
i) Require or result in the construction or expansion of telecommunication facilities, which would cause significant environmental impacts?	☐	☐	☐	☑	☐

a) Through the use of efficient plumbing fixtures, the sewer flows after construction of the Project are not expected to substantially increase. The City's WWTP operates under NPDES permit CA0079049 (renewed in 2012) and Waste Discharge Requirements (WDR) Order No. 5-01-067. The City's WWTP is undergoing improvements in order to comply with the discharge requirements of the NPDES permit. Phase 1 of the WWTP's improvements, completed in September 2014, included improvements to influent pumps, motors, and controls; bar screen replacements and upgrades; improvements to flow distribution channels and control gates; concrete steel surfaces corrosion repair and protection; construction of a mechanical mixing of anaerobic digester; and replacement of primary treatment equipment. Phase 2 of the update, which includes secondary treatment replacement and construction of new tertiary advance treatment, is scheduled to be completed in August 2018 (City of Davis 2016a). All flows from the Project site would be treated at the WWTP in accordance with the NPDES permit requirements and WDRs;

therefore, the impact of the Project associated with possible exceedances of WWTP requirements would be less than significant.

The 2003 LRDP EIR found that implementation of the 2003 LRDP together with other regional development could generate a cumulative demand for wastewater treatment facilities in the region, the construction of which could result in significant unavoidable impacts on habitat (LRDP Impact 4.15-10). However, due to the increase in water use efficiency, which corresponds to a decrease in wastewater flow, the Project is not anticipated to substantially increase wastewater demand. Therefore, the Project's contribution to this significant cumulative impact would not be cumulatively considerable. The cumulative impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR, conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

b) Domestic Water Facilities

The Project would receive water service from the City of Davis. Through the use of efficient plumbing fixtures, the Project would not substantially increase the existing water demand. The existing connection is adequate to serve the maximum possible demand for daily consumption and for adequate fire flow. The Project's firewater final layout and any required hydrant locations are subject to Davis Fire Department approval. The Project would have a less-than-significant impact on domestic water supplies.

Impact 4.15-11 of the 2003 LRDP EIR found that campus development under the 2003 LRDP, in conjunction with regional growth would result in a cumulatively significant demand for domestic water in the region. Therefore, it is likely that the domestic water distribution systems of surrounding jurisdictions would need to be expanded to serve growth. The LRDP-related population that resides in these communities could contribute to the need for these improvements. However, environmental impacts from distribution system improvements are expected to be less than significant because these improvements would likely include minor disturbances and would likely be located within existing roads or other already disturbed environments. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR, conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Wastewater Facilities

The Project would not contribute to LRDP Impact 4.15-3, which identifies the need to expand the campus wastewater facilities, given the Project's location in the City of Davis. The Project would connect to the City sanitary sewer system. Through the use of efficient plumbing fixtures, the sewer flows after construction of the Project are not expected to substantially increase. The operating capacity of the WWTP is 7.5 mgd, and current average flows are approximately 5.3 mgd. The Project would connect to sewer mains within the Project site. Proposed improvements to the City's WWTP would not increase the capacity of the plant. Since the Project is not expected to increase the existing current peak building demand, the Project would not increase the amount of wastewater flows that would require treatment by the City's WWTP. Therefore, the Project would have a less-than-significant impact on the need for expansion of existing or construction of new facilities.

Impact 4.15-10 of the 2003 LRDP EIR found that campus development under the 2003 LRDP, in conjunction with regional growth, would significantly increase demand for wastewater treatment facilities in the region. However, there is no evidence indicating that LRDP-related population in Davis, Woodland, Winters, and Dixon will contribute to the need for new or expanded utility systems that will have a significant effect on the environment. To the extent that LRDP-related population growth contributes to the need for expanded wastewater treatment facilities and infrastructure that result in loss of farmland, in compliance with LRDP Mitigation 4.15-10, the campus would negotiate with affected jurisdictions to determine the University's fair share of costs for feasible mitigation to reduce associated significant environmental impacts. The campus' contribution to mitigation could include implementation of preservation mechanisms for on-campus prime farmland and/or habitat conservation. However, impacts associated with an irreversible loss of farmland and habitat could not be reduced to less-than-significant levels. Therefore, this impact is considered significant and unavoidable. As discussed previously, the Project's contribution to this significant cumulative impact would not be cumulatively considerable, as the Project would not substantially increase wastewater generation, increase student population or induce substantial population growth in the Project area to. This cumulative impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR, conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

c) The Project would connect to the City of Davis storm water system at the existing manhole. The amount of impervious surface at the Project site is not expected to significantly increase. The Project would be designed to retain any increased stormwater flows on the site, consistent with City stormwater standards (see Section 7.9, Hydrology and Water Quality). Therefore, the Project would have a less-than-significant impact on the need to expand or construct stormwater facilities.

d) As discussed previously, the City's 2015 Urban Water Management Plan (UWMP) projects reasonably available water volume of 26,080 acre-feet per year (AFY) through the year 2040 and a projected water demand of 13,560 AFY though 2035 (City of Davis 2016a). Both the City of Davis and UC Davis have recently gained the ability to purchase wholesale treated surface water from the Woodland Davis Clean Water Agency, which would allow some of the City's (lower-quality) intermediate aquifer wells to be kept for emergency supply only (City of Davis 2016a). The Project is not expected to substially increase the amount of water required at the Project site and the City has sufficient entitlements to serve the water demand of the Project site; therefore, this impact is less than significant. Impacts to groundwater and groundwater recharge associated with the Project's demand for water are addressed under item (b) in Section 7.9, Hydrology and Water Quality.

e) The City's WWTP would provide wastewater treatment for the Project. As discussed in item (b), the Project would not substantially increase the wastewater flows on the Project site. The WWTP has current average flows of 5.3 mgd and a capacity of 7.5 mgd. The WWTP has sufficient capacity to handle the wastewater flows from the Project site and this impact would be less than significant.

f) The waste disposal needs of the Project would be served by the Yolo County Landfill, located northeast of the City. Solid waste from the Project site would be collected by Davis Waste Removal, a private firm under contract to the City, and transported to the Yolo County Landfill. The Yolo County Landfill has a permitted capacity of 1,800 tons per day and is anticipated to have adequate capacity for continued operation through the year 2081 (CalRecycle 2016). In addition, reductions in construction waste are required by both the LEED certification process and the Campus Waste Diversion Plan. Therefore, the Yolo County Landfill would have adequate capacity to serve the Project and the impact would be less than significant.

The 2003 LRDP EIR found that campus development under the 2003 LRDP, in conjunction with regional growth would result in a cumulatively significantly increase in demand on the regional landfill (LRDP Impact 4.15-11). However, the expansion of associated utilities and service systems to meet this demand would not result in significant environmental effects. The Project would not increase demand for the Yolo County Landfill beyond what was analyzed in the 2003 LRDP EIR. This cumulative impact was adequately analyzed in the 2003 LRDP EIR. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR, conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

g) Materials generated during demolition of the existing Emerson Hall buildings would be separated into different categories for reuse, recycling or landfill disposal. Most of the furnishings, fixtures, and some equipment from the buildings would be reused in other campus housing buildings. As the buildings are demolished, some materials such as copper from pipes and wiring and other metals would be gathered for recycling. Demolition of the buildings would be preceded by abatement of any high concentrations of lead and asbestos. Low concentration of asbestos can be sent to certain landfills that are certified to accept low levels of asbestos. The closest landfill that accepts asbestos contaminated material is Recology Hay Road Landfill in Vacaville which is approximately 16.5 miles south of the Project site. Emerson Hall buildings are wooden-framed structures with a concrete foundation. The demolished concrete foundations would be recycled if possible and the remaining debris would be sent to the Yolo County landfill. The Project would comply with all applicable statutes and regulations related to solid waste. Therefore, solid waste impacts would be less than significant.

h) The Project site is served by PG&E for electricity and natural gas. An increase in students will increase energy demand. However, this will be offset by improvements in the new facilities, which is targeted for at least a LEED Gold certification. It is anticipated that the Project will be 20% more energy efficient than current Title 24 requirements. The existing utilities have adequate capacity to serve the Project and no off-site improvements or other increases to utility capacity would be required by the Project. The impact would be less than significant.

Impact 4.15-11 of the 2003 LRDP EIR found that campus development under the 2003 LRDP, in conjunction with regional growth, would result in a cumulatively significant increase in demand for electricity and natural gas. However, the expansion of associated utilities and service systems to meet this demand would not result in significant environmental effects. This cumulative impact was adequately analyzed in the 2003 LRDP EIR. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR, conditions have not substantially changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

i) The Project would connect to the campus telecommunications system with connections that are currently available within the Project site. No additional capacity would be needed to serve the Project and no off-site construction would be required. The impact would be less than significant.

7.18 MANDATORY FINDINGS OF SIGNIFICANCE

MANDATORY FINDINGS OF SIGNIFICANCE Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
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?	☐	☐	☑	☐	☐
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)?	☐	☐	☑	☐	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐	☐

a) The Project would not significantly affect fish or wildlife habitat, nor would it eliminate examples of California history or prehistory. Cumulative regional impacts to these resources could be significant, but the Project's contribution to these significant cumulative impact would not be cumulatively considerable.

b,c) Cumulative impacts related to the implementation of the 2003 LRDP and other regional growth are discussed in each environmental section in Sections 7.1 through 7.17. These impacts were adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. Cumulative growth in the region is consistent with that assumed in the 2003 LRDP EIR (see Section 4.5), no conditions have changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

The Project would not have environmental effects that are substantial adverse effects, direct or indirect, on human beings.

8 DEPARTMENT OF FISH AND WILDLIFE DETERMINATION

CDFW imposes and collects a filing fee to defray the costs of managing and protecting California's vast fish and wildlife resources, including, but not limited to, consulting with other public agencies, reviewing environmental documents, recommending mitigation measures, and developing monitoring programs. The CEQA filing fee will be waived if a project will have no effect on fish and wildlife (Fish and Game Code, Section 711.4, subd. (c)(2)(A)). Additionally, projects that are statutorily or categorically exempt from CEQA are also not subject to the filing fee and do not require a no effect determination (Cal. Code Regs., tit. 14, Sections 15260–15333; Fish and Game Code, Section 711.4, subd. (d)(1)). Only CDFW staff is responsible for determining whether a project will qualify for a No Effect Determination and if the CEQA filing fee will be waived.

_ Certificate of Fee Exemption

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APPENDIX A
~~PROPOSED~~ NEGATIVE DECLARATION

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~~PROPOSED~~ NEGATIVE DECLARATION

Lead Agency: University of California

Project Proponent: University of California, Davis

Project Location: The Project is located north of Russell Boulevard within the City of Davis, north of the central campus. Emerson Hall is located in the Cuarto Residence Hall Area, an off-campus University student housing development, arranged around Oxford Circle, and north of Russell Boulevard, south of Wake Forest Drive, and west of Sycamore Lane.

Project Description: UC Davis proposes to demolish Emerson Hall and construct a new 180,000 gross-square-foot (gsf) residence hall. The existing three-story 118,000 gsf building was constructed in 1967 and houses 500 students. The new building would provide improved energy efficiency and an upgraded design for improved livability and student enjoyment, along with addressing current deficiencies. The Project would increase the housing on the site by 200–300 beds to provide 700–800 beds. The residential buildings would also provide space for lounge and study areas, a community kitchen, laundry facilities, an academic advising center, and other support space. New utility connections would also be provided. The proposed demolition is anticipated to begin in 2019. Student residents would move to the new building at the beginning of the Fall 2022 academic year.

Mitigation Measures: No project-specific mitigation measures are proposed.

Reference: This ~~Proposed~~ Negative Declaration incorporates by reference in their entirety the text of the Tiered Initial Study prepared for the Project, the 2003 LRDP, and the 2003 LRDP EIR.

Determination: In accordance with CEQA, a Draft Tiered Initial Study has been prepared by UC Davis that evaluates the environmental effects of the Project. On the basis of the Project's Draft Tiered Initial Study, the campus found that the Project could not have a significant effect on the environment that has not been previously addressed in the 2003 LRDP EIR, and no new mitigation measures, other than those previously identified in the 2003 LRDP EIR, are required.

Public Review: In accordance with Section 15073 of the CEQA Guidelines, the Draft Tiered Initial Study for the Project ~~will be~~ was circulated for public and agency review from January 22, 2018, to February 20, 2018. Comments received during the review period and responses to these comments ~~will be~~ are presented in the final Tiered Initial Study.

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APPENDIX B
AIR QUALITY AND GREENHOUSE GAS CALCULATIONS

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CalEEMod Version: CalEEMod.2016.3.2

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Emerson Hall Replacement Project
Yolo/Solano AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.20	Acre	0.20	8,712.00	0
Apartments Low Rise	276.00	Dwelling Unit	1.50	180,000.00	789

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 6.8 **Precipitation Freq (Days)** 55

Climate Zone 2 **Operational Year** 2023

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 499.66 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Emerson Hall Replacement Project. YSAQMD. Adjust CO2 intensity factor to meet a RPS of 33%.

Land Use - Construction of a 180,000 gsf dormitory (800 bed total beds assuming triple occupancy for a total of 176 du).

Construction Phase - Construction expected to being late 2019 and would be completed by mid-2022.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Trips and VMT - Default trips.

On-road Fugitive Dust - Assumed that 100% of roads are paved.

Demolition - Demolition of existing 118,000 gsf building.

Architectural Coating -

Vehicle Trips - No trips assumed.

Road Dust - Assumed that 100% of roadways are paved.

Woodstoves - No woodstoves or fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - Water construction site twice daily.

Water Mitigation - Per UC Davis Drought Response Plan - 20% reduction in water use.

Waste Mitigation - 75% waste diversion goal by 2020 consistent with AB 341 (not mitigation).

Grading -

Table Name	Column Name	Default Value	New Value
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tblConstructionPhase	NumDays	200.00	550.00
tblConstructionPhase	NumDays	10.00	20.00
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tblConstructionPhase	PhaseEndDate	10/1/2019	1/7/2020
tblConstructionPhase	PhaseEndDate	10/7/2019	1/13/2020
tblConstructionPhase	PhaseEndDate	7/13/2020	2/21/2022
tblConstructionPhase	PhaseEndDate	7/27/2020	3/7/2022
tblConstructionPhase	PhaseEndDate	8/10/2020	4/4/2022
tblConstructionPhase	PhaseStartDate	9/28/2019	1/4/2020
tblConstructionPhase	PhaseStartDate	10/2/2019	1/8/2020
tblConstructionPhase	PhaseStartDate	10/8/2019	1/14/2020
tblConstructionPhase	PhaseStartDate	7/14/2020	2/22/2022
tblConstructionPhase	PhaseStartDate	7/28/2020	3/8/2022

tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceWoodMass	4,558.40	0.00
tblFireplaces	NumberGas	151.80	0.00
tblFireplaces	NumberNoFireplace	27.60	276.00
tblFireplaces	NumberWood	96.60	0.00
tblLandUse	LandUseSquareFeet	276,000.00	180,000.00
tblLandUse	LotAcreage	17.25	1.50
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	499.66
tblRoadDust	RoadPercentPave	94	100
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	SU_TR	6.07	0.00

tblVehicleTrips	WD_TR	6.59	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	4,558.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1043	1.0636	0.6753	1.3100e-003	0.0744	0.0563	0.1307	0.0123	0.0526	0.0649	0.0000	117.4922	117.4922	0.0247	0.0000	118.1104
2020	0.3678	2.4622	2.4165	5.8700e-003	0.2345	0.1079	0.3424	0.0665	0.1040	0.1704	0.0000	513.3889	513.3889	0.0555	0.0000	514.7764
2021	0.3341	2.2611	2.3425	5.8900e-003	0.2195	0.0916	0.3112	0.0590	0.0884	0.1474	0.0000	514.0669	514.0669	0.0526	0.0000	515.3819
2022	1.1772	0.3366	0.3841	9.3000e-004	0.0337	0.0135	0.0472	9.0400e-003	0.0130	0.0220	0.0000	81.2501	81.2501	9.1100e-003	0.0000	81.4778
Maximum	**1.1772**	**2.4622**	**2.4165**	**5.8900e-003**	**0.2345**	**0.1079**	**0.3424**	**0.0665**	**0.1040**	**0.1704**	**0.0000**	**514.0669**	**514.0669**	**0.0555**	**0.0000**	**515.3819**

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					
2019	0.1043	1.0636	0.6753	1.3100e-003	0.0383	0.0563	0.0946	6.8300e-003	0.0526	0.0594	0.0000	117.4921	117.4921	0.0247	0.0000	118.1103
2020	0.3678	2.4622	2.4165	5.8700e-003	0.2246	0.1079	0.3325	0.0619	0.1040	0.1659	0.0000	513.3886	513.3886	0.0555	0.0000	514.7762
2021	0.3341	2.2611	2.3425	5.8900e-003	0.2195	0.0916	0.3112	0.0590	0.0884	0.1474	0.0000	514.0666	514.0666	0.0526	0.0000	515.3816
2022	1.1772	0.3366	0.3841	9.3000e-004	0.0337	0.0135	0.0472	9.0400e-003	0.0130	0.0220	0.0000	81.2501	81.2501	9.1100e-003	0.0000	81.4777
Maximum	**1.1772**	**2.4622**	**2.4165**	**5.8900e-003**	**0.2246**	**0.1079**	**0.3325**	**0.0619**	**0.1040**	**0.1659**	**0.0000**	**514.0666**	**514.0666**	**0.0555**	**0.0000**	**515.3816**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**8.19**	**0.00**	**5.53**	**6.86**	**0.00**	**2.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8781	0.0236	2.0498	1.1000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	3.3476	3.3476	3.2200e-003	0.0000	3.4280
Energy	0.0180	0.1539	0.0655	9.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	459.3239	459.3239	0.0197	6.6400e-003	461.7968
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	25.7717	0.0000	25.7717	1.5231	0.0000	63.8484
Water						0.0000	0.0000		0.0000	0.0000	5.7050	31.0459	36.7509	0.5878	0.0142	55.6792
Total	**0.8961**	**0.1775**	**2.1153**	**1.0900e-003**	**0.0000**	**0.0238**	**0.0238**	**0.0000**	**0.0238**	**0.0238**	**31.4768**	**493.7174**	**525.1941**	**2.1338**	**0.0209**	**584.7523**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8781	0.0236	2.0498	1.1000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	3.3476	3.3476	3.2200e-003	0.0000	3.4280
Energy	0.0180	0.1539	0.0655	9.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	459.3239	459.3239	0.0197	6.6400e-003	461.7968
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	6.4429	0.0000	6.4429	0.3808	0.0000	15.9621
Water						0.0000	0.0000		0.0000	0.0000	4.5640	24.8367	29.4007	0.4702	0.0114	44.5433
Total	**0.8961**	**0.1775**	**2.1153**	**1.0900e-003**	**0.0000**	**0.0238**	**0.0238**	**0.0000**	**0.0238**	**0.0238**	**11.0070**	**487.5082**	**498.5152**	**0.8739**	**0.0180**	**525.7302**

	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	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.03	1.26	5.08	59.04	13.62	10.09

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2019	1/3/2020	5	90	
2	Site Preparation	Site Preparation	1/4/2020	1/7/2020	5	2	
3	Grading	Grading	1/8/2020	1/13/2020	5	4	
4	Building Construction	Building Construction	1/14/2020	2/21/2022	5	550	
5	Paving	Paving	2/22/2022	3/7/2022	5	10	
6	Architectural Coating	Architectural Coating	3/8/2022	4/4/2022	5	20	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.2

Residential Indoor: 364,500; Residential Outdoor: 121,500; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41

Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	537.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	202.00	31.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2019

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					0.0658	0.0000	0.0658	9.9600e-003	0.0000	9.9600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0998	0.9864	0.6479	1.0500e-003		0.0560	0.0560		0.0523	0.0523	0.0000	93.1600	93.1600	0.0237	0.0000	93.7530
Total	**0.0998**	**0.9864**	**0.6479**	**1.0500e-003**	**0.0658**	**0.0560**	**0.1217**	**9.9600e-003**	**0.0523**	**0.0622**	**0.0000**	**93.1600**	**93.1600**	**0.0237**	**0.0000**	**93.7530**

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	2.2800e-003	0.0757	0.0122	2.1000e-004	4.5200e-003	3.1000e-004	4.8300e-003	1.2400e-003	3.0000e-004	1.5400e-003	0.0000	20.4153	20.4153	9.0000e-004	0.0000	20.4377
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1600e-003	1.5100e-003	0.0152	4.0000e-005	4.1600e-003	3.0000e-005	4.1900e-003	1.1100e-003	3.0000e-005	1.1300e-003	0.0000	3.9170	3.9170	1.1000e-004	0.0000	3.9197
Total	**4.4400e-003**	**0.0772**	**0.0274**	**2.5000e-004**	**8.6800e-003**	**3.4000e-004**	**9.0200e-003**	**2.3500e-003**	**3.3000e-004**	**2.6700e-003**	**0.0000**	**24.3322**	**24.3322**	**1.0100e-003**	**0.0000**	**24.3574**

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					0.0296	0.0000	0.0296	4.4800e-003	0.0000	4.4800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0998	0.9864	0.6479	1.0500e-003		0.0560	0.0560		0.0523	0.0523	0.0000	93.1599	93.1599	0.0237	0.0000	93.7529
Total	**0.0998**	**0.9864**	**0.6479**	**1.0500e-003**	**0.0296**	**0.0560**	**0.0855**	**4.4800e-003**	**0.0523**	**0.0568**	**0.0000**	**93.1599**	**93.1599**	**0.0237**	**0.0000**	**93.7529**

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	2.2800e-003	0.0757	0.0122	2.1000e-004	4.5200e-003	3.1000e-004	4.8300e-003	1.2400e-003	3.0000e-004	1.5400e-003	0.0000	20.4153	20.4153	9.0000e-004	0.0000	20.4377
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1600e-003	1.5100e-003	0.0152	4.0000e-005	4.1600e-003	3.0000e-005	4.1900e-003	1.1100e-003	3.0000e-005	1.1300e-003	0.0000	3.9170	3.9170	1.1000e-004	0.0000	3.9197
Total	**4.4400e-003**	**0.0772**	**0.0274**	**2.5000e-004**	**8.6800e-003**	**3.4000e-004**	**9.0200e-003**	**2.3500e-003**	**3.3000e-004**	**2.6700e-003**	**0.0000**	**24.3322**	**24.3322**	**1.0100e-003**	**0.0000**	**24.3574**

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.2700e-003	0.0000	2.2700e-003	3.4000e-004	0.0000	3.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1900e-003	0.0314	0.0220	4.0000e-005		1.7300e-003	1.7300e-003		1.6100e-003	1.6100e-003	0.0000	3.1602	3.1602	8.1000e-004	0.0000	3.1805
Total	**3.1900e-003**	**0.0314**	**0.0220**	**4.0000e-005**	**2.2700e-003**	**1.7300e-003**	**4.0000e-003**	**3.4000e-004**	**1.6100e-003**	**1.9500e-003**	**0.0000**	**3.1602**	**3.1602**	**8.1000e-004**	**0.0000**	**3.1805**

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	7.0000e-005	2.4200e-003	3.9000e-004	1.0000e-005	3.4500e-003	1.0000e-005	3.4600e-003	8.5000e-004	1.0000e-005	8.6000e-004	0.0000	0.6962	0.6962	3.0000e-005	0.0000	0.6969
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	4.7000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1308	0.1308	0.0000	0.0000	0.1309
Total	**1.4000e-004**	**2.4700e-003**	**8.6000e-004**	**1.0000e-005**	**3.5900e-003**	**1.0000e-005**	**3.6000e-003**	**8.9000e-004**	**1.0000e-005**	**9.0000e-004**	**0.0000**	**0.8270**	**0.8270**	**3.0000e-005**	**0.0000**	**0.8278**

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					1.0200e-003	0.0000	1.0200e-003	1.5000e-004	0.0000	1.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1900e-003	0.0314	0.0220	4.0000e-005		1.7300e-003	1.7300e-003		1.6100e-003	1.6100e-003	0.0000	3.1602	3.1602	8.1000e-004	0.0000	3.1805
Total	**3.1900e-003**	**0.0314**	**0.0220**	**4.0000e-005**	**1.0200e-003**	**1.7300e-003**	**2.7500e-003**	**1.5000e-004**	**1.6100e-003**	**1.7600e-003**	**0.0000**	**3.1602**	**3.1602**	**8.1000e-004**	**0.0000**	**3.1805**

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	7.0000e-005	2.4200e-003	3.9000e-004	1.0000e-005	3.4500e-003	1.0000e-005	3.4600e-003	8.5000e-004	1.0000e-005	8.6000e-004	0.0000	0.6962	0.6962	3.0000e-005	0.0000	0.6969
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	4.7000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1308	0.1308	0.0000	0.0000	0.1309
Total	**1.4000e-004**	**2.4700e-003**	**8.6000e-004**	**1.0000e-005**	**3.5900e-003**	**1.0000e-005**	**3.6000e-003**	**8.9000e-004**	**1.0000e-005**	**9.0000e-004**	**0.0000**	**0.8270**	**0.8270**	**3.0000e-005**	**0.0000**	**0.8278**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	0.0184	7.7100e-003	2.0000e-005		8.2000e-004	8.2000e-004		7.6000e-004	7.6000e-004	0.0000	1.5127	1.5127	4.9000e-004	0.0000	1.5249
Total	**1.6300e-003**	**0.0184**	**7.7100e-003**	**2.0000e-005**	**5.8000e-003**	**8.2000e-004**	**6.6200e-003**	**2.9500e-003**	**7.6000e-004**	**3.7100e-003**	**0.0000**	**1.5127**	**1.5127**	**4.9000e-004**	**0.0000**	**1.5249**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0537	0.0537	0.0000	0.0000	0.0537
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0537**	**0.0537**	**0.0000**	**0.0000**	**0.0537**

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					2.6100e-003	0.0000	2.6100e-003	1.3300e-003	0.0000	1.3300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	0.0184	7.7100e-003	2.0000e-005		8.2000e-004	8.2000e-004		7.6000e-004	7.6000e-004	0.0000	1.5127	1.5127	4.9000e-004	0.0000	1.5249
Total	**1.6300e-003**	**0.0184**	**7.7100e-003**	**2.0000e-005**	**2.6100e-003**	**8.2000e-004**	**3.4300e-003**	**1.3300e-003**	**7.6000e-004**	**2.0900e-003**	**0.0000**	**1.5127**	**1.5127**	**4.9000e-004**	**0.0000**	**1.5249**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0537	0.0537	0.0000	0.0000	0.0537
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0537**	**0.0537**	**0.0000**	**0.0000**	**0.0537**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-003	0.0302	0.0129	3.0000e-005		1.3700e-003	1.3700e-003		1.2600e-003	1.2600e-003	0.0000	2.4779	2.4779	8.0000e-004	0.0000	2.4980
Total	**2.7000e-003**	**0.0302**	**0.0129**	**3.0000e-005**	**9.8300e-003**	**1.3700e-003**	**0.0112**	**5.0500e-003**	**1.2600e-003**	**6.3100e-003**	**0.0000**	**2.4779**	**2.4779**	**8.0000e-004**	**0.0000**	**2.4980**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	3.9000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1073	0.1073	0.0000	0.0000	0.1074
Total	**6.0000e-005**	**4.0000e-005**	**3.9000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1073**	**0.1073**	**0.0000**	**0.0000**	**0.1074**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.4200e-003	0.0000	4.4200e-003	2.2700e-003	0.0000	2.2700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-003	0.0302	0.0129	3.0000e-005		1.3700e-003	1.3700e-003		1.2600e-003	1.2600e-003	0.0000	2.4779	2.4779	8.0000e-004	0.0000	2.4980
Total	**2.7000e-003**	**0.0302**	**0.0129**	**3.0000e-005**	**4.4200e-003**	**1.3700e-003**	**5.7900e-003**	**2.2700e-003**	**1.2600e-003**	**3.5300e-003**	**0.0000**	**2.4779**	**2.4779**	**8.0000e-004**	**0.0000**	**2.4980**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	3.9000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1073	0.1073	0.0000	0.0000	0.1074
Total	**6.0000e-005**	**4.0000e-005**	**3.9000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1073**	**0.1073**	**0.0000**	**0.0000**	**0.1074**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

Category	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
	tons/yr										MT/yr					
Off-Road	0.2569	1.8707	1.6683	2.7900e-003		0.1007	0.1007		0.0973	0.0973	0.0000	229.6508	229.6508	0.0426	0.0000	230.7166
Total	**0.2569**	**1.8707**	**1.6683**	**2.7900e-003**		**0.1007**	**0.1007**		**0.0973**	**0.0973**	**0.0000**	**229.6508**	**229.6508**	**0.0426**	**0.0000**	**230.7166**

Unmitigated Construction Off-Site

Category	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
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0140	0.4488	0.0884	1.1000e-003	0.0248	1.9600e-003	0.0267	7.1600e-003	1.8700e-003	9.0400e-003	0.0000	104.1718	104.1718	6.4000e-003	0.0000	104.3317
Worker	0.0893	0.0603	0.6157	1.9000e-003	0.1880	1.3300e-003	0.1894	0.0500	1.2200e-003	0.0512	0.0000	171.4276	171.4276	4.3400e-003	0.0000	171.5360
Total	**0.1032**	**0.5091**	**0.7042**	**3.0000e-003**	**0.2128**	**3.2900e-003**	**0.2161**	**0.0572**	**3.0900e-003**	**0.0603**	**0.0000**	**275.5994**	**275.5994**	**0.0107**	**0.0000**	**275.8677**

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	0.2569	1.8707	1.6683	2.7900e-003		0.1007	0.1007		0.0973	0.0973	0.0000	229.6505	229.6505	0.0426	0.0000	230.7163
Total	**0.2569**	**1.8707**	**1.6683**	**2.7900e-003**		**0.1007**	**0.1007**		**0.0973**	**0.0973**	**0.0000**	**229.6505**	**229.6505**	**0.0426**	**0.0000**	**230.7163**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0140	0.4488	0.0884	1.1000e-003	0.0248	1.9600e-003	0.0267	7.1600e-003	1.8700e-003	9.0400e-003	0.0000	104.1718	104.1718	6.4000e-003	0.0000	104.3317
Worker	0.0893	0.0603	0.6157	1.9000e-003	0.1880	1.3300e-003	0.1894	0.0500	1.2200e-003	0.0512	0.0000	171.4276	171.4276	4.3400e-003	0.0000	171.5360
Total	**0.1032**	**0.5091**	**0.7042**	**3.0000e-003**	**0.2128**	**3.2900e-003**	**0.2161**	**0.0572**	**3.0900e-003**	**0.0603**	**0.0000**	**275.5994**	**275.5994**	**0.0107**	**0.0000**	**275.8677**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2365	1.7795	1.6834	2.8800e-003		0.0893	0.0893		0.0862	0.0862	0.0000	236.9197	236.9197	0.0423	0.0000	237.9771
Total	**0.2365**	**1.7795**	**1.6834**	**2.8800e-003**		**0.0893**	**0.0893**		**0.0862**	**0.0862**	**0.0000**	**236.9197**	**236.9197**	**0.0423**	**0.0000**	**237.9771**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0120	0.4260	0.0796	1.1200e-003	0.0256	1.0000e-003	0.0266	7.3900e-003	9.6000e-004	8.3400e-003	0.0000	106.4721	106.4721	6.3000e-003	0.0000	106.6295
Worker	0.0855	0.0556	0.5795	1.8900e-003	0.1940	1.3300e-003	0.1953	0.0516	1.2300e-003	0.0528	0.0000	170.6752	170.6752	4.0000e-003	0.0000	170.7753
Total	**0.0976**	**0.4816**	**0.6591**	**3.0100e-003**	**0.2195**	**2.3300e-003**	**0.2219**	**0.0590**	**2.1900e-003**	**0.0612**	**0.0000**	**277.1473**	**277.1473**	**0.0103**	**0.0000**	**277.4048**

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	0.2365	1.7795	1.6834	2.8800e-003		0.0893	0.0893		0.0862	0.0862	0.0000	236.9194	236.9194	0.0423	0.0000	237.9768
Total	**0.2365**	**1.7795**	**1.6834**	**2.8800e-003**		**0.0893**	**0.0893**		**0.0862**	**0.0862**	**0.0000**	**236.9194**	**236.9194**	**0.0423**	**0.0000**	**237.9768**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0120	0.4260	0.0796	1.1200e-003	0.0256	1.0000e-003	0.0266	7.3900e-003	9.6000e-004	8.3400e-003	0.0000	106.4721	106.4721	6.3000e-003	0.0000	106.6295
Worker	0.0855	0.0556	0.5795	1.8900e-003	0.1940	1.3300e-003	0.1953	0.0516	1.2300e-003	0.0528	0.0000	170.6752	170.6752	4.0000e-003	0.0000	170.7753
Total	**0.0976**	**0.4816**	**0.6591**	**3.0100e-003**	**0.2195**	**2.3300e-003**	**0.2219**	**0.0590**	**2.1900e-003**	**0.0612**	**0.0000**	**277.1473**	**277.1473**	**0.0103**	**0.0000**	**277.4048**

3.5 Building Construction - 2022

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	0.0297	0.2251	0.2291	4.0000e-004		0.0106	0.0106		0.0102	0.0102	0.0000	32.6838	32.6838	5.6900e-003	0.0000	32.8262
Total	**0.0297**	**0.2251**	**0.2291**	**4.0000e-004**		**0.0106**	**0.0106**		**0.0102**	**0.0102**	**0.0000**	**32.6838**	**32.6838**	**5.6900e-003**	**0.0000**	**32.8262**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5400e-003	0.0558	0.0101	1.5000e-004	3.5200e-003	1.2000e-004	3.6400e-003	1.0200e-003	1.1000e-004	1.1300e-003	0.0000	14.5461	14.5461	8.2000e-004	0.0000	14.5667
Worker	0.0110	6.8800e-003	0.0734	2.5000e-004	0.0268	1.8000e-004	0.0269	7.1100e-003	1.6000e-004	7.2800e-003	0.0000	22.6814	22.6814	5.0000e-004	0.0000	22.6938
Total	**0.0126**	**0.0627**	**0.0835**	**4.0000e-004**	**0.0303**	**3.0000e-004**	**0.0306**	**8.1300e-003**	**2.7000e-004**	**8.4100e-003**	**0.0000**	**37.2276**	**37.2276**	**1.3200e-003**	**0.0000**	**37.2605**

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	0.0297	0.2251	0.2291	4.0000e-004		0.0106	0.0106		0.0102	0.0102	0.0000	32.6838	32.6838	5.6900e-003	0.0000	32.8261
Total	**0.0297**	**0.2251**	**0.2291**	**4.0000e-004**		**0.0106**	**0.0106**		**0.0102**	**0.0102**	**0.0000**	**32.6838**	**32.6838**	**5.6900e-003**	**0.0000**	**32.8261**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5400e-003	0.0558	0.0101	1.5000e-004	3.5200e-003	1.2000e-004	3.6400e-003	1.0200e-003	1.1000e-004	1.1300e-003	0.0000	14.5461	14.5461	8.2000e-004	0.0000	14.5667
Worker	0.0110	6.8800e-003	0.0734	2.5000e-004	0.0268	1.8000e-004	0.0269	7.1100e-003	1.6000e-004	7.2800e-003	0.0000	22.6814	22.6814	5.0000e-004	0.0000	22.6938
Total	**0.0126**	**0.0627**	**0.0835**	**4.0000e-004**	**0.0303**	**3.0000e-004**	**0.0306**	**8.1300e-003**	**2.7000e-004**	**8.4100e-003**	**0.0000**	**37.2276**	**37.2276**	**1.3200e-003**	**0.0000**	**37.2605**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4400e-003**	**0.0339**	**0.0440**	**7.0000e-005**		**1.7400e-003**	**1.7400e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**5.8848**	**5.8848**	**1.8700e-003**	**0.0000**	**5.9315**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.2000e-004	1.3100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4055	0.4055	1.0000e-005	0.0000	0.4057
Total	**2.0000e-004**	**1.2000e-004**	**1.3100e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4055**	**0.4055**	**1.0000e-005**	**0.0000**	**0.4057**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9314
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4400e-003**	**0.0339**	**0.0440**	**7.0000e-005**		**1.7400e-003**	**1.7400e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**5.8848**	**5.8848**	**1.8700e-003**	**0.0000**	**5.9314**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.2000e-004	1.3100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4055	0.4055	1.0000e-005	0.0000	0.4057
Total	**2.0000e-004**	**1.2000e-004**	**1.3100e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4055**	**0.4055**	**1.0000e-005**	**0.0000**	**0.4057**

3.7 Architectural Coating - 2022

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	1.1281					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**1.1302**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2100e-003	7.6000e-004	8.0700e-003	3.0000e-005	2.9400e-003	2.0000e-005	2.9600e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.4952	2.4952	5.0000e-005	0.0000	2.4966
Total	**1.2100e-003**	**7.6000e-004**	**8.0700e-003**	**3.0000e-005**	**2.9400e-003**	**2.0000e-005**	**2.9600e-003**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**0.0000**	**2.4952**	**2.4952**	**5.0000e-005**	**0.0000**	**2.4966**

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	1.1281					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**1.1302**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2100e-003	7.6000e-004	8.0700e-003	3.0000e-005	2.9400e-003	2.0000e-005	2.9600e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.4952	2.4952	5.0000e-005	0.0000	2.4966
Total	**1.2100e-003**	**7.6000e-004**	**8.0700e-003**	**3.0000e-005**	**2.9400e-003**	**2.0000e-005**	**2.9600e-003**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**0.0000**	**2.4952**	**2.4952**	**5.0000e-005**	**0.0000**	**2.4966**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Other Non-Asphalt Surfaces	10.00	5.00	7.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.526397	0.037140	0.194621	0.111857	0.019784	0.005283	0.037518	0.055864	0.001328	0.001945	0.006704	0.000686	0.000873
Other Non-Asphalt Surfaces	0.526397	0.037140	0.194621	0.111857	0.019784	0.005283	0.037518	0.055864	0.001328	0.001945	0.006704	0.000686	0.000873

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	281.1290	281.1290	0.0163	3.3800e-003	282.5429
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	281.1290	281.1290	0.0163	3.3800e-003	282.5429
NaturalGas Mitigated	0.0180	0.1539	0.0655	9.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	178.1949	178.1949	3.4200e-003	3.2700e-003	179.2538
NaturalGas Unmitigated	0.0180	0.1539	0.0655	9.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	178.1949	178.1949	3.4200e-003	3.2700e-003	179.2538

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.33925e+006	0.0180	0.1539	0.0655	9.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	178.1949	178.1949	3.4200e-003	3.2700e-003	179.2538
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0180**	**0.1539**	**0.0655**	**9.8000e-004**		**0.0124**	**0.0124**		**0.0124**	**0.0124**	**0.0000**	**178.1949**	**178.1949**	**3.4200e-003**	**3.2700e-003**	**179.2538**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.33925e+006	0.0180	0.1539	0.0655	9.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	178.1949	178.1949	3.4200e-003	3.2700e-003	179.2538
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0180**	**0.1539**	**0.0655**	**9.8000e-004**		**0.0124**	**0.0124**		**0.0124**	**0.0124**	**0.0000**	**178.1949**	**178.1949**	**3.4200e-003**	**3.2700e-003**	**179.2538**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.24041e+006	281.1290	0.0163	3.3800e-003	282.5429
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**281.1290**	**0.0163**	**3.3800e-003**	**282.5429**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.24041e+006	281.1290	0.0163	3.3800e-003	282.5429
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**281.1290**	**0.0163**	**3.3800e-003**	**282.5429**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8781	0.0236	2.0498	1.1000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	3.3476	3.3476	3.2200e-003	0.0000	3.4280
Unmitigated	0.8781	0.0236	2.0498	1.1000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	3.3476	3.3476	3.2200e-003	0.0000	3.4280

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1128					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7036					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0618	0.0236	2.0498	1.1000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	3.3476	3.3476	3.2200e-003	0.0000	3.4280
Total	**0.8781**	**0.0236**	**2.0498**	**1.1000e-004**		**0.0114**	**0.0114**		**0.0114**	**0.0114**	**0.0000**	**3.3476**	**3.3476**	**3.2200e-003**	**0.0000**	**3.4280**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1128					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7036					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0618	0.0236	2.0498	1.1000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	3.3476	3.3476	3.2200e-003	0.0000	3.4280
Total	**0.8781**	**0.0236**	**2.0498**	**1.1000e-004**		**0.0114**	**0.0114**		**0.0114**	**0.0114**	**0.0000**	**3.3476**	**3.3476**	**3.2200e-003**	**0.0000**	**3.4280**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	29.4007	0.4702	0.0114	44.5433
Unmitigated	36.7509	0.5878	0.0142	55.6792

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	17.9825 / 11.3368	36.7509	0.5878	0.0142	55.6792
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**36.7509**	**0.5878**	**0.0142**	**55.6792**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	14.386 / 9.06944	29.4007	0.4702	0.0114	44.5433
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**29.4007**	**0.4702**	**0.0114**	**44.5433**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.4429	0.3808	0.0000	15.9621
Unmitigated	25.7717	1.5231	0.0000	63.8484

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	126.96	25.7717	1.5231	0.0000	63.8484
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**25.7717**	**1.5231**	**0.0000**	**63.8484**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	31.74	6.4429	0.3808	0.0000	15.9621
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**6.4429**	**0.3808**	**0.0000**	**15.9621**

CalEEMod Version: CalEEMod.2016.3.2

Date: 12/13/2017 10:45 AM

Emerson Hall Replacement Project

Yolo/Solano AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.20	Acre	0.20	8,712.00	0
Apartments Low Rise	276.00	Dwelling Unit	1.50	180,000.00	789

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	55
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	499.66	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Emerson Hall Replacement Project. YSAQMD. Adjust CO2 intensity factor to meet a RPS of 33%.

Land Use - Construction of a 180,000 gsf dormitory (800 bed total beds assuming triple occupancy for a total of 176 du).

Construction Phase - Construction expected to being late 2019 and would be completed by mid-2022.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Trips and VMT - Default trips.

On-road Fugitive Dust - Assumed that 100% of roads are paved.

Demolition - Demolition of existing 118,000 gsf building.

Architectural Coating -

Vehicle Trips - No trips assumed.

Road Dust - Assumed that 100% of roadways are paved.

Woodstoves - No woodstoves or fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - Water construction site twice daily.

Water Mitigation - Per UC Davis Drought Response Plan - 20% reduction in water use.

Waste Mitigation - 75% waste diversion goal by 2020 consistent with AB 341 (not mitigation).

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	90.00
tblConstructionPhase	NumDays	200.00	550.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	9/27/2019	1/3/2020
tblConstructionPhase	PhaseEndDate	10/1/2019	1/7/2020
tblConstructionPhase	PhaseEndDate	10/7/2019	1/13/2020
tblConstructionPhase	PhaseEndDate	7/13/2020	2/21/2022
tblConstructionPhase	PhaseEndDate	7/27/2020	3/7/2022
tblConstructionPhase	PhaseEndDate	8/10/2020	4/4/2022
tblConstructionPhase	PhaseStartDate	9/28/2019	1/4/2020
tblConstructionPhase	PhaseStartDate	10/2/2019	1/8/2020
tblConstructionPhase	PhaseStartDate	10/8/2019	1/14/2020
tblConstructionPhase	PhaseStartDate	7/14/2020	2/22/2022
tblConstructionPhase	PhaseStartDate	7/28/2020	3/8/2022

tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceWoodMass	4,558.40	0.00
tblFireplaces	NumberGas	151.80	0.00
tblFireplaces	NumberNoFireplace	27.60	276.00
tblFireplaces	NumberWood	96.60	0.00
tblLandUse	LandUseSquareFeet	276,000.00	180,000.00
tblLandUse	LotAcreage	17.25	1.50
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	499.66
tblRoadDust	RoadPercentPave	94	100
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	SU_TR	6.07	0.00

tblVehicleTrips	WD_TR	6.59	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	4,558.40	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.4028	24.3951	15.5604	0.0302	1.7176	1.2941	3.0118	0.2844	1.2092	1.4936	0.0000	2,991.8391	2,991.8391	0.6258	0.0000	3,007.4845
2020	2.9395	22.5417	19.4152	0.0473	5.8604	1.1588	6.6818	2.9698	1.0822	3.7255	0.0000	4,561.7448	4,561.7448	0.6197	0.0000	4,573.3963
2021	2.6457	17.2395	18.5639	0.0467	1.7379	0.7020	2.4399	0.4655	0.6774	1.1429	0.0000	4,496.0665	4,496.0665	0.4450	0.0000	4,507.1916
2022	113.1541	15.9092	17.9378	0.0460	1.7378	0.6052	2.3430	0.4655	0.5841	1.0496	0.0000	4,429.9176	4,429.9176	0.4298	0.0000	4,440.6625
Maximum	**113.1541**	**24.3951**	**19.4152**	**0.0473**	**5.8604**	**1.2941**	**6.6818**	**2.9698**	**1.2092**	**3.7255**	**0.0000**	**4,561.7448**	**4,561.7448**	**0.6258**	**0.0000**	**4,573.3963**

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					
2019	2.4028	24.3951	15.5604	0.0302	0.8862	1.2941	2.1803	0.1585	1.2092	1.3677	0.0000	2,991.8391	2,991.8391	0.6258	0.0000	3,007.4845
2020	2.9395	22.5417	19.4152	0.0473	3.1711	1.1588	4.3300	1.3453	1.0822	2.1010	0.0000	4,561.7448	4,561.7448	0.6197	0.0000	4,573.3963
2021	2.6457	17.2395	18.5639	0.0467	1.7379	0.7020	2.4399	0.4655	0.6774	1.1429	0.0000	4,496.0665	4,496.0665	0.4450	0.0000	4,507.1916
2022	113.1541	15.9092	17.9378	0.0460	1.7378	0.6052	2.3430	0.4655	0.5841	1.0496	0.0000	4,429.9176	4,429.9176	0.4298	0.0000	4,440.6625
Maximum	**113.1541**	**24.3951**	**19.4152**	**0.0473**	**3.1711**	**1.2941**	**4.3300**	**1.3453**	**1.2092**	**2.1010**	**0.0000**	**4,561.7448**	**4,561.7448**	**0.6258**	**0.0000**	**4,573.3963**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**31.85**	**0.00**	**21.99**	**41.82**	**0.00**	**23.62**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.1594	0.2625	22.7755	1.2000e-003		0.1261	0.1261		0.1261	0.1261	0.0000	41.0005	41.0005	0.0394	0.0000	41.9862
Energy	0.0987	0.8431	0.3588	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.3084	1,076.3084	0.0206	0.0197	1,082.7043
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**5.2580**	**1.1057**	**23.1342**	**6.5800e-003**	**0.0000**	**0.1942**	**0.1942**	**0.0000**	**0.1942**	**0.1942**	**0.0000**	**1,117.3089**	**1,117.3089**	**0.0601**	**0.0197**	**1,124.6905**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.1594	0.2625	22.7755	1.2000e-003		0.1261	0.1261		0.1261	0.1261	0.0000	41.0005	41.0005	0.0394	0.0000	41.9862
Energy	0.0987	0.8431	0.3588	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.3084	1,076.3084	0.0206	0.0197	1,082.7043
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**5.2580**	**1.1057**	**23.1342**	**6.5800e-003**	**0.0000**	**0.1942**	**0.1942**	**0.0000**	**0.1942**	**0.1942**	**0.0000**	**1,117.3089**	**1,117.3089**	**0.0601**	**0.0197**	**1,124.6905**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2019	1/3/2020	5	90	
2	Site Preparation	Site Preparation	1/4/2020	1/7/2020	5	2	
3	Grading	Grading	1/8/2020	1/13/2020	5	4	
4	Building Construction	Building Construction	1/14/2020	2/21/2022	5	550	
5	Paving	Paving	2/22/2022	3/7/2022	5	10	
6	Architectural Coating	Architectural Coating	3/8/2022	4/4/2022	5	20	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.2

Residential Indoor: 364,500; Residential Outdoor: 121,500; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29

Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	537.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	202.00	31.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2019

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					1.5118	0.0000	1.5118	0.2289	0.0000	0.2289			0.0000			0.0000
Off-Road	2.2950	22.6751	14.8943	0.0241		1.2863	1.2863		1.2017	1.2017		2,360.7198	2,360.7198	0.6011		2,375.7475
Total	**2.2950**	**22.6751**	**14.8943**	**0.0241**	**1.5118**	**1.2863**	**2.7981**	**0.2289**	**1.2017**	**1.4307**		**2,360.7198**	**2,360.7198**	**0.6011**		**2,375.7475**

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	0.0515	1.6890	0.2661	4.9800e-003	0.1070	7.1500e-003	0.1141	0.0292	6.8400e-003	0.0361		522.1582	522.1582	0.0216		522.6993
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0563	0.0311	0.4000	1.0900e-003	0.0989	6.9000e-004	0.0996	0.0262	6.4000e-004	0.0269		108.9612	108.9612	3.0600e-003		109.0377
Total	**0.1078**	**1.7200**	**0.6661**	**6.0700e-003**	**0.2059**	**7.8400e-003**	**0.2137**	**0.0555**	**7.4800e-003**	**0.0630**		**631.1194**	**631.1194**	**0.0247**		**631.7370**

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					0.6803	0.0000	0.6803	0.1030	0.0000	0.1030			0.0000			0.0000
Off-Road	2.2950	22.6751	14.8943	0.0241		1.2863	1.2863		1.2017	1.2017	0.0000	2,360.7197	2,360.7197	0.6011		2,375.7475
Total	**2.2950**	**22.6751**	**14.8943**	**0.0241**	**0.6803**	**1.2863**	**1.9666**	**0.1030**	**1.2017**	**1.3048**	**0.0000**	**2,360.7197**	**2,360.7197**	**0.6011**		**2,375.7475**

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	0.0515	1.6890	0.2661	4.9800e-003	0.1070	7.1500e-003	0.1141	0.0292	6.8400e-003	0.0361		522.1582	522.1582	0.0216		522.6993
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0563	0.0311	0.4000	1.0900e-003	0.0989	6.9000e-004	0.0996	0.0262	6.4000e-004	0.0269		108.9612	108.9612	3.0600e-003		109.0377
Total	**0.1078**	**1.7200**	**0.6661**	**6.0700e-003**	**0.2059**	**7.8400e-003**	**0.2137**	**0.0555**	**7.4800e-003**	**0.0630**		**631.1194**	**631.1194**	**0.0247**		**631.7370**

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5118	0.0000	1.5118	0.2289	0.0000	0.2289			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761		2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**	**1.5118**	**1.1525**	**2.6642**	**0.2289**	**1.0761**	**1.3051**		**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

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	0.0470	1.5680	0.2502	4.9300e-003	2.3919	5.6800e-003	2.3976	0.5901	5.4400e-003	0.5955		516.4059	516.4059	0.0200		516.9066
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0515	0.0275	0.3593	1.0600e-003	0.0989	6.8000e-004	0.0996	0.0262	6.2000e-004	0.0269		105.5397	105.5397	2.6900e-003		105.6068
Total	**0.0985**	**1.5954**	**0.6095**	**5.9900e-003**	**2.4908**	**6.3600e-003**	**2.4972**	**0.6163**	**6.0600e-003**	**0.6224**		**621.9456**	**621.9456**	**0.0227**		**622.5134**

Mitigated Construction On-Site

Category	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
	lb/day										lb/day					
Fugitive Dust					0.6803	0.0000	0.6803	0.1030	0.0000	0.1030			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761	0.0000	2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**	**0.6803**	**1.1525**	**1.8328**	**0.1030**	**1.0761**	**1.1792**	**0.0000**	**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

Mitigated Construction Off-Site

Category	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
	lb/day										lb/day					
Hauling	0.0470	1.5680	0.2502	4.9300e-003	2.3919	5.6800e-003	2.3976	0.5901	5.4400e-003	0.5955		516.4059	516.4059	0.0200		516.9066
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0515	0.0275	0.3593	1.0600e-003	0.0989	6.8000e-004	0.0996	0.0262	6.2000e-004	0.0269		105.5397	105.5397	2.6900e-003		105.6068
Total	**0.0985**	**1.5954**	**0.6095**	**5.9900e-003**	**2.4908**	**6.3600e-003**	**2.4972**	**0.6163**	**6.0600e-003**	**0.6224**		**621.9456**	**621.9456**	**0.0227**		**622.5134**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

Category	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
	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.6299	18.3464	7.7093	0.0172		0.8210	0.8210		0.7553	0.7553		1,667.4119	1,667.4119	0.5393		1,680.8937
Total	**1.6299**	**18.3464**	**7.7093**	**0.0172**	**5.7996**	**0.8210**	**6.6205**	**2.9537**	**0.7553**	**3.7090**		**1,667.4119**	**1,667.4119**	**0.5393**		**1,680.8937**

Unmitigated Construction Off-Site

Category	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
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0317	0.0169	0.2211	6.5000e-004	0.0609	4.2000e-004	0.0613	0.0161	3.8000e-004	0.0165		64.9475	64.9475	1.6500e-003		64.9888
Total	**0.0317**	**0.0169**	**0.2211**	**6.5000e-004**	**0.0609**	**4.2000e-004**	**0.0613**	**0.0161**	**3.8000e-004**	**0.0165**		**64.9475**	**64.9475**	**1.6500e-003**		**64.9888**

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					2.6098	0.0000	2.6098	1.3292	0.0000	1.3292			0.0000			0.0000
Off-Road	1.6299	18.3464	7.7093	0.0172		0.8210	0.8210		0.7553	0.7553	0.0000	1,667.4119	1,667.4119	0.5393		1,680.8937
Total	**1.6299**	**18.3464**	**7.7093**	**0.0172**	**2.6098**	**0.8210**	**3.4308**	**1.3292**	**0.7553**	**2.0844**	**0.0000**	**1,667.4119**	**1,667.4119**	**0.5393**		**1,680.8937**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0317	0.0169	0.2211	6.5000e-004	0.0609	4.2000e-004	0.0613	0.0161	3.8000e-004	0.0165		64.9475	64.9475	1.6500e-003		64.9888
Total	**0.0317**	**0.0169**	**0.2211**	**6.5000e-004**	**0.0609**	**4.2000e-004**	**0.0613**	**0.0161**	**3.8000e-004**	**0.0165**		**64.9475**	**64.9475**	**1.6500e-003**		**64.9888**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.3498	15.0854	6.4543	0.0141		0.6844	0.6844		0.6296	0.6296		1,365.7183	1,365.7183	0.4417		1,376.7609
Total	**1.3498**	**15.0854**	**6.4543**	**0.0141**	**4.9143**	**0.6844**	**5.5986**	**2.5256**	**0.6296**	**3.1552**		**1,365.7183**	**1,365.7183**	**0.4417**		**1,376.7609**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0317	0.0169	0.2211	6.5000e-004	0.0609	4.2000e-004	0.0613	0.0161	3.8000e-004	0.0165		64.9475	64.9475	1.6500e-003		64.9888
Total	**0.0317**	**0.0169**	**0.2211**	**6.5000e-004**	**0.0609**	**4.2000e-004**	**0.0613**	**0.0161**	**3.8000e-004**	**0.0165**		**64.9475**	**64.9475**	**1.6500e-003**		**64.9888**

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					2.2114	0.0000	2.2114	1.1365	0.0000	1.1365			0.0000			0.0000
Off-Road	1.3498	15.0854	6.4543	0.0141		0.6844	0.6844		0.6296	0.6296	0.0000	1,365.7183	1,365.7183	0.4417		1,376.7609
Total	**1.3498**	**15.0854**	**6.4543**	**0.0141**	**2.2114**	**0.6844**	**2.8958**	**1.1365**	**0.6296**	**1.7662**	**0.0000**	**1,365.7183**	**1,365.7183**	**0.4417**		**1,376.7609**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0317	0.0169	0.2211	6.5000e-004	0.0609	4.2000e-004	0.0613	0.0161	3.8000e-004	0.0165		64.9475	64.9475	1.6500e-003		64.9888
Total	**0.0317**	**0.0169**	**0.2211**	**6.5000e-004**	**0.0609**	**4.2000e-004**	**0.0613**	**0.0161**	**3.8000e-004**	**0.0165**		**64.9475**	**64.9475**	**1.6500e-003**		**64.9888**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**		**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1082	3.4924	0.6449	8.8000e-003	0.2013	0.0153	0.2166	0.0579	0.0146	0.0726		920.6610	920.6610	0.0528		921.9818
Worker	0.8008	0.4271	5.5822	0.0165	1.5366	0.0105	1.5471	0.4076	9.6700e-003	0.4173		1,639.9244	1,639.9244	0.0417		1,640.9678
Total	**0.9090**	**3.9195**	**6.2271**	**0.0253**	**1.7379**	**0.0258**	**1.7637**	**0.4655**	**0.0243**	**0.4898**		**2,560.5853**	**2,560.5853**	**0.0946**		**2,562.9496**

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**	**0.0000**	**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1082	3.4924	0.6449	8.8000e-003	0.2013	0.0153	0.2166	0.0579	0.0146	0.0726		920.6610	920.6610	0.0528		921.9818
Worker	0.8008	0.4271	5.5822	0.0165	1.5366	0.0105	1.5471	0.4076	9.6700e-003	0.4173		1,639.9244	1,639.9244	0.0417		1,640.9678
Total	**0.9090**	**3.9195**	**6.2271**	**0.0253**	**1.7379**	**0.0258**	**1.7637**	**0.4655**	**0.0243**	**0.4898**		**2,560.5853**	**2,560.5853**	**0.0946**		**2,562.9496**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**		**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0901	3.2215	0.5599	8.7200e-003	0.2012	7.4800e-003	0.2087	0.0579	7.1600e-003	0.0651		912.1908	912.1908	0.0504		913.4498
Worker	0.7431	0.3819	5.1046	0.0159	1.5366	0.0102	1.5468	0.4076	9.3900e-003	0.4170		1,582.6558	1,582.6558	0.0374		1,583.5901
Total	**0.8332**	**3.6034**	**5.6645**	**0.0246**	**1.7379**	**0.0177**	**1.7555**	**0.4655**	**0.0166**	**0.4821**		**2,494.8465**	**2,494.8465**	**0.0877**		**2,497.0399**

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	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**	**0.0000**	**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0901	3.2215	0.5599	8.7200e-003	0.2012	7.4800e-003	0.2087	0.0579	7.1600e-003	0.0651		912.1908	912.1908	0.0504		913.4498
Worker	0.7431	0.3819	5.1046	0.0159	1.5366	0.0102	1.5468	0.4076	9.3900e-003	0.4170		1,582.6558	1,582.6558	0.0374		1,583.5901
Total	**0.8332**	**3.6034**	**5.6645**	**0.0246**	**1.7379**	**0.0177**	**1.7555**	**0.4655**	**0.0166**	**0.4821**		**2,494.8465**	**2,494.8465**	**0.0877**		**2,497.0399**

3.5 Building Construction - 2022

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	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0834	3.0632	0.5145	8.6300e-003	0.2012	6.3800e-003	0.2076	0.0579	6.1100e-003	0.0640		903.5982	903.5982	0.0476		904.7884
Worker	0.6930	0.3429	4.6969	0.0153	1.5366	9.9400e-003	1.5466	0.4076	9.1500e-003	0.4168		1,524.7766	1,524.7766	0.0336		1,525.6160
Total	**0.7764**	**3.4061**	**5.2114**	**0.0239**	**1.7378**	**0.0163**	**1.7542**	**0.4655**	**0.0153**	**0.4808**		**2,428.3748**	**2,428.3748**	**0.0812**		**2,430.4044**

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	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**	**0.0000**	**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0834	3.0632	0.5145	8.6300e-003	0.2012	6.3800e-003	0.2076	0.0579	6.1100e-003	0.0640		903.5982	903.5982	0.0476		904.7884
Worker	0.6930	0.3429	4.6969	0.0153	1.5366	9.9400e-003	1.5466	0.4076	9.1500e-003	0.4168		1,524.7766	1,524.7766	0.0336		1,525.6160
Total	**0.7764**	**3.4061**	**5.2114**	**0.0239**	**1.7378**	**0.0163**	**1.7542**	**0.4655**	**0.0153**	**0.4808**		**2,428.3748**	**2,428.3748**	**0.0812**		**2,430.4044**

3.6 Paving - 2022

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	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0446	0.0221	0.3023	9.8000e-004	0.0989	6.4000e-004	0.0995	0.0262	5.9000e-004	0.0268		98.1292	98.1292	2.1600e-003		98.1832
Total	**0.0446**	**0.0221**	**0.3023**	**9.8000e-004**	**0.0989**	**6.4000e-004**	**0.0995**	**0.0262**	**5.9000e-004**	**0.0268**		**98.1292**	**98.1292**	**2.1600e-003**		**98.1832**

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	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205	0.0000	1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**	**0.0000**	**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0446	0.0221	0.3023	9.8000e-004	0.0989	6.4000e-004	0.0995	0.0262	5.9000e-004	0.0268		98.1292	98.1292	2.1600e-003		98.1832
Total	**0.0446**	**0.0221**	**0.3023**	**9.8000e-004**	**0.0989**	**6.4000e-004**	**0.0995**	**0.0262**	**5.9000e-004**	**0.0268**		**98.1292**	**98.1292**	**2.1600e-003**		**98.1832**

3.7 Architectural Coating - 2022

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	112.8123					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**113.0169**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1372	0.0679	0.9301	3.0300e-003	0.3043	1.9700e-003	0.3063	0.0807	1.8100e-003	0.0825		301.9360	301.9360	6.6500e-003		302.1022
Total	**0.1372**	**0.0679**	**0.9301**	**3.0300e-003**	**0.3043**	**1.9700e-003**	**0.3063**	**0.0807**	**1.8100e-003**	**0.0825**		**301.9360**	**301.9360**	**6.6500e-003**		**302.1022**

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	112.8123					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**113.0169**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1372	0.0679	0.9301	3.0300e-003	0.3043	1.9700e-003	0.3063	0.0807	1.8100e-003	0.0825		301.9360	301.9360	6.6500e-003		302.1022
Total	**0.1372**	**0.0679**	**0.9301**	**3.0300e-003**	**0.3043**	**1.9700e-003**	**0.3063**	**0.0807**	**1.8100e-003**	**0.0825**		**301.9360**	**301.9360**	**6.6500e-003**		**302.1022**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Other Non-Asphalt Surfaces	10.00	5.00	7.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.526397	0.037140	0.194621	0.111857	0.019784	0.005283	0.037518	0.055864	0.001328	0.001945	0.006704	0.000686	0.000873
Other Non-Asphalt Surfaces	0.526397	0.037140	0.194621	0.111857	0.019784	0.005283	0.037518	0.055864	0.001328	0.001945	0.006704	0.000686	0.000873

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0987	0.8431	0.3588	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.3084	1,076.3084	0.0206	0.0197	1,082.7043
NaturalGas Unmitigated	0.0987	0.8431	0.3588	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.3084	1,076.3084	0.0206	0.0197	1,082.7043

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	9148.62	0.0987	0.8431	0.3588	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.3084	1,076.3084	0.0206	0.0197	1,082.7043
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0987**	**0.8431**	**0.3588**	**5.3800e-003**		**0.0682**	**0.0682**		**0.0682**	**0.0682**		**1,076.3084**	**1,076.3084**	**0.0206**	**0.0197**	**1,082.7043**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	9.14862	0.0987	0.8431	0.3588	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.3084	1,076.3084	0.0206	0.0197	1,082.7043
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0987**	**0.8431**	**0.3588**	**5.3800e-003**		**0.0682**	**0.0682**		**0.0682**	**0.0682**		**1,076.3084**	**1,076.3084**	**0.0206**	**0.0197**	**1,082.7043**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.1594	0.2625	22.7755	1.2000e-003		0.1261	0.1261		0.1261	0.1261	0.0000	41.0005	41.0005	0.0394	0.0000	41.9862
Unmitigated	5.1594	0.2625	22.7755	1.2000e-003		0.1261	0.1261		0.1261	0.1261	0.0000	41.0005	41.0005	0.0394	0.0000	41.9862

6.2 Area by SubCategory

Unmitigated

SubCategory	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
	lb/day										lb/day					
Architectural Coating	0.6182					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.8551					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6862	0.2625	22.7755	1.2000e-003		0.1261	0.1261		0.1261	0.1261		41.0005	41.0005	0.0394		41.9862
Total	**5.1594**	**0.2625**	**22.7755**	**1.2000e-003**		**0.1261**	**0.1261**		**0.1261**	**0.1261**	**0.0000**	**41.0005**	**41.0005**	**0.0394**	**0.0000**	**41.9862**

Mitigated

SubCategory	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
	lb/day										lb/day					
Architectural Coating	0.6182					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.8551					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6862	0.2625	22.7755	1.2000e-003		0.1261	0.1261		0.1261	0.1261		41.0005	41.0005	0.0394		41.9862
Total	**5.1594**	**0.2625**	**22.7755**	**1.2000e-003**		**0.1261**	**0.1261**		**0.1261**	**0.1261**	**0.0000**	**41.0005**	**41.0005**	**0.0394**	**0.0000**	**41.9862**

CalEEMod Version: CalEEMod.2016.3.2

Date: 12/13/2017 10:48 AM

Emerson Hall Replacement Project

Yolo/Solano AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.20	Acre	0.20	8,712.00	0
Apartments Low Rise	276.00	Dwelling Unit	1.50	180,000.00	789

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	55
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	499.66	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Emerson Hall Replacement Project. YSAQMD. Adjust CO2 intensity factor to meet a RPS of 33%.

Land Use - Construction of a 180,000 gsf dormitory (800 bed total beds assuming triple occupancy for a total of 176 du).

Construction Phase - Construction expected to being late 2019 and would be completed by mid-2022.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Off-road Equipment - Default equipment.

Trips and VMT - Default trips.

On-road Fugitive Dust - Assumed that 100% of roads are paved.

Demolition - Demolition of existing 118,000 gsf building.

Architectural Coating -

Vehicle Trips - No trips assumed.

Road Dust - Assumed that 100% of roadways are paved.

Woodstoves - No woodstoves or fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - Water construction site twice daily.

Water Mitigation - Per UC Davis Drought Response Plan - 20% reduction in water use.

Waste Mitigation - 75% waste diversion goal by 2020 consistent with AB 341 (not mitigation).

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	90.00
tblConstructionPhase	NumDays	200.00	550.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	9/27/2019	1/3/2020
tblConstructionPhase	PhaseEndDate	10/1/2019	1/7/2020
tblConstructionPhase	PhaseEndDate	10/7/2019	1/13/2020
tblConstructionPhase	PhaseEndDate	7/13/2020	2/21/2022
tblConstructionPhase	PhaseEndDate	7/27/2020	3/7/2022
tblConstructionPhase	PhaseEndDate	8/10/2020	4/4/2022
tblConstructionPhase	PhaseStartDate	9/28/2019	1/4/2020
tblConstructionPhase	PhaseStartDate	10/2/2019	1/8/2020
tblConstructionPhase	PhaseStartDate	10/8/2019	1/14/2020
tblConstructionPhase	PhaseStartDate	7/14/2020	2/22/2022
tblConstructionPhase	PhaseStartDate	7/28/2020	3/8/2022

tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceWoodMass	4,558.40	0.00
tblFireplaces	NumberGas	151.80	0.00
tblFireplaces	NumberNoFireplace	27.60	276.00
tblFireplaces	NumberWood	96.60	0.00
tblLandUse	LandUseSquareFeet	276,000.00	180,000.00
tblLandUse	LotAcreage	17.25	1.50
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	499.66
tblRoadDust	RoadPercentPave	94	100
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	SU_TR	6.07	0.00

tblVehicleTrips	WD_TR	6.59	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	4,558.40	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.4018	24.4607	15.5563	0.0299	1.7176	1.2943	3.0120	0.2844	1.2094	1.4938	0.0000	2,968.1636	2,968.1636	0.6282	0.0000	2,983.8697
2020	2.9028	22.6000	18.9614	0.0452	5.8604	1.1590	6.6818	2.9698	1.0823	3.7255	0.0000	4,347.4910	4,347.4910	0.6219	0.0000	4,359.2136
2021	2.6120	17.3683	18.1285	0.0446	1.7379	0.7024	2.4403	0.4655	0.6778	1.1433	0.0000	4,288.4285	4,288.4285	0.4480	0.0000	4,299.6275
2022	113.1470	16.0211	17.5174	0.0440	1.7378	0.6056	2.3434	0.4655	0.5845	1.0500	0.0000	4,228.9169	4,228.9169	0.4328	0.0000	4,239.7358
Maximum	**113.1470**	**24.4607**	**18.9614**	**0.0452**	**5.8604**	**1.2943**	**6.6818**	**2.9698**	**1.2094**	**3.7255**	**0.0000**	**4,347.4910**	**4,347.4910**	**0.6282**	**0.0000**	**4,359.2136**

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					
2019	2.4018	24.4607	15.5563	0.0299	0.8862	1.2943	2.1805	0.1585	1.2094	1.3679	0.0000	2,968.1636	2,968.1636	0.6282	0.0000	2,983.8697
2020	2.9028	22.6000	18.9614	0.0452	3.1711	1.1590	4.3301	1.3453	1.0823	2.1010	0.0000	4,347.4910	4,347.4910	0.6219	0.0000	4,359.2136
2021	2.6120	17.3683	18.1285	0.0446	1.7379	0.7024	2.4403	0.4655	0.6778	1.1433	0.0000	4,288.4285	4,288.4285	0.4480	0.0000	4,299.6275
2022	113.1470	16.0211	17.5174	0.0440	1.7378	0.6056	2.3434	0.4655	0.5845	1.0500	0.0000	4,228.9169	4,228.9169	0.4328	0.0000	4,239.7358
Maximum	**113.1470**	**24.4607**	**18.9614**	**0.0452**	**3.1711**	**1.2943**	**4.3301**	**1.3453**	**1.2094**	**2.1010**	**0.0000**	**4,347.4910**	**4,347.4910**	**0.6282**	**0.0000**	**4,359.2136**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**31.85**	**0.00**	**21.99**	**41.82**	**0.00**	**23.61**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.1594	0.2625	22.7755	1.2000e-003		0.1261	0.1261		0.1261	0.1261	0.0000	41.0005	41.0005	0.0394	0.0000	41.9862
Energy	0.0987	0.8431	0.3588	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.3084	1,076.3084	0.0206	0.0197	1,082.7043
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**5.2580**	**1.1057**	**23.1342**	**6.5800e-003**	**0.0000**	**0.1942**	**0.1942**	**0.0000**	**0.1942**	**0.1942**	**0.0000**	**1,117.3089**	**1,117.3089**	**0.0601**	**0.0197**	**1,124.6905**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.1594	0.2625	22.7755	1.2000e-003		0.1261	0.1261		0.1261	0.1261	0.0000	41.0005	41.0005	0.0394	0.0000	41.9862
Energy	0.0987	0.8431	0.3588	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.3084	1,076.3084	0.0206	0.0197	1,082.7043
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**5.2580**	**1.1057**	**23.1342**	**6.5800e-003**	**0.0000**	**0.1942**	**0.1942**	**0.0000**	**0.1942**	**0.1942**	**0.0000**	**1,117.3089**	**1,117.3089**	**0.0601**	**0.0197**	**1,124.6905**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2019	1/3/2020	5	90	
2	Site Preparation	Site Preparation	1/4/2020	1/7/2020	5	2	
3	Grading	Grading	1/8/2020	1/13/2020	5	4	
4	Building Construction	Building Construction	1/14/2020	2/21/2022	5	550	
5	Paving	Paving	2/22/2022	3/7/2022	5	10	
6	Architectural Coating	Architectural Coating	3/8/2022	4/4/2022	5	20	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.2

Residential Indoor: 364,500; Residential Outdoor: 121,500; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29

Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	537.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	202.00	31.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2019

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					1.5118	0.0000	1.5118	0.2289	0.0000	0.2289			0.0000			0.0000
Off-Road	2.2950	22.6751	14.8943	0.0241		1.2863	1.2863		1.2017	1.2017		2,360.7198	2,360.7198	0.6011		2,375.7475
Total	**2.2950**	**22.6751**	**14.8943**	**0.0241**	**1.5118**	**1.2863**	**2.7981**	**0.2289**	**1.2017**	**1.4307**		**2,360.7198**	**2,360.7198**	**0.6011**		**2,375.7475**

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	0.0535	1.7465	0.3019	4.8700e-003	0.1070	7.3400e-003	0.1143	0.0292	7.0300e-003	0.0363		510.6689	510.6689	0.0244		511.2779
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0533	0.0391	0.3601	9.7000e-004	0.0989	6.9000e-004	0.0996	0.0262	6.4000e-004	0.0269		96.7750	96.7750	2.7700e-003		96.8443
Total	**0.1067**	**1.7857**	**0.6620**	**5.8400e-003**	**0.2059**	**8.0300e-003**	**0.2139**	**0.0555**	**7.6700e-003**	**0.0631**		**607.4438**	**607.4438**	**0.0271**		**608.1222**

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					0.6803	0.0000	0.6803	0.1030	0.0000	0.1030			0.0000			0.0000
Off-Road	2.2950	22.6751	14.8943	0.0241		1.2863	1.2863		1.2017	1.2017	0.0000	2,360.7197	2,360.7197	0.6011		2,375.7475
Total	**2.2950**	**22.6751**	**14.8943**	**0.0241**	**0.6803**	**1.2863**	**1.9666**	**0.1030**	**1.2017**	**1.3048**	**0.0000**	**2,360.7197**	**2,360.7197**	**0.6011**		**2,375.7475**

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	0.0535	1.7465	0.3019	4.8700e-003	0.1070	7.3400e-003	0.1143	0.0292	7.0300e-003	0.0363		510.6689	510.6689	0.0244		511.2779
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0533	0.0391	0.3601	9.7000e-004	0.0989	6.9000e-004	0.0996	0.0262	6.4000e-004	0.0269		96.7750	96.7750	2.7700e-003		96.8443
Total	**0.1067**	**1.7857**	**0.6620**	**5.8400e-003**	**0.2059**	**8.0300e-003**	**0.2139**	**0.0555**	**7.6700e-003**	**0.0631**		**607.4438**	**607.4438**	**0.0271**		**608.1222**

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5118	0.0000	1.5118	0.2289	0.0000	0.2289			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761		2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**	**1.5118**	**1.1525**	**2.6642**	**0.2289**	**1.0761**	**1.3051**		**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

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	0.0488	1.6191	0.2829	4.8200e-003	2.3919	5.8300e-003	2.3978	0.5901	5.5800e-003	0.5957		504.9223	504.9223	0.0226		505.4864
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0488	0.0346	0.3215	9.4000e-004	0.0989	6.8000e-004	0.0996	0.0262	6.2000e-004	0.0269		93.7297	93.7297	2.4200e-003		93.7902
Total	**0.0976**	**1.6537**	**0.6044**	**5.7600e-003**	**2.4908**	**6.5100e-003**	**2.4974**	**0.6163**	**6.2000e-003**	**0.6225**		**598.6521**	**598.6521**	**0.0250**		**599.2766**

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					0.6803	0.0000	0.6803	0.1030	0.0000	0.1030			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761	0.0000	2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**	**0.6803**	**1.1525**	**1.8328**	**0.1030**	**1.0761**	**1.1792**	**0.0000**	**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

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	0.0488	1.6191	0.2829	4.8200e-003	2.3919	5.8300e-003	2.3978	0.5901	5.5800e-003	0.5957		504.9223	504.9223	0.0226		505.4864
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0488	0.0346	0.3215	9.4000e-004	0.0989	6.8000e-004	0.0996	0.0262	6.2000e-004	0.0269		93.7297	93.7297	2.4200e-003		93.7902
Total	**0.0976**	**1.6537**	**0.6044**	**5.7600e-003**	**2.4908**	**6.5100e-003**	**2.4974**	**0.6163**	**6.2000e-003**	**0.6225**		**598.6521**	**598.6521**	**0.0250**		**599.2766**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.6299	18.3464	7.7093	0.0172		0.8210	0.8210		0.7553	0.7553		1,667.4119	1,667.4119	0.5393		1,680.8937
Total	**1.6299**	**18.3464**	**7.7093**	**0.0172**	**5.7996**	**0.8210**	**6.6205**	**2.9537**	**0.7553**	**3.7090**		**1,667.4119**	**1,667.4119**	**0.5393**		**1,680.8937**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0300	0.0213	0.1978	5.8000e-004	0.0609	4.2000e-004	0.0613	0.0161	3.8000e-004	0.0165		57.6798	57.6798	1.4900e-003		57.7170
Total	**0.0300**	**0.0213**	**0.1978**	**5.8000e-004**	**0.0609**	**4.2000e-004**	**0.0613**	**0.0161**	**3.8000e-004**	**0.0165**		**57.6798**	**57.6798**	**1.4900e-003**		**57.7170**

Mitigated Construction On-Site

Category	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
	lb/day										lb/day					
Fugitive Dust					2.6098	0.0000	2.6098	1.3292	0.0000	1.3292			0.0000			0.0000
Off-Road	1.6299	18.3464	7.7093	0.0172		0.8210	0.8210		0.7553	0.7553	0.0000	1,667.4119	1,667.4119	0.5393		1,680.8937
Total	**1.6299**	**18.3464**	**7.7093**	**0.0172**	**2.6098**	**0.8210**	**3.4308**	**1.3292**	**0.7553**	**2.0844**	**0.0000**	**1,667.4119**	**1,667.4119**	**0.5393**		**1,680.8937**

Mitigated Construction Off-Site

Category	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
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0300	0.0213	0.1978	5.8000e-004	0.0609	4.2000e-004	0.0613	0.0161	3.8000e-004	0.0165		57.6798	57.6798	1.4900e-003		57.7170
Total	**0.0300**	**0.0213**	**0.1978**	**5.8000e-004**	**0.0609**	**4.2000e-004**	**0.0613**	**0.0161**	**3.8000e-004**	**0.0165**		**57.6798**	**57.6798**	**1.4900e-003**		**57.7170**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.3498	15.0854	6.4543	0.0141		0.6844	0.6844		0.6296	0.6296		1,365.7183	1,365.7183	0.4417		1,376.7609
Total	**1.3498**	**15.0854**	**6.4543**	**0.0141**	**4.9143**	**0.6844**	**5.5986**	**2.5256**	**0.6296**	**3.1552**		**1,365.7183**	**1,365.7183**	**0.4417**		**1,376.7609**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0300	0.0213	0.1978	5.8000e-004	0.0609	4.2000e-004	0.0613	0.0161	3.8000e-004	0.0165		57.6798	57.6798	1.4900e-003		57.7170
Total	**0.0300**	**0.0213**	**0.1978**	**5.8000e-004**	**0.0609**	**4.2000e-004**	**0.0613**	**0.0161**	**3.8000e-004**	**0.0165**		**57.6798**	**57.6798**	**1.4900e-003**		**57.7170**

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					2.2114	0.0000	2.2114	1.1365	0.0000	1.1365			0.0000			0.0000
Off-Road	1.3498	15.0854	6.4543	0.0141		0.6844	0.6844		0.6296	0.6296	0.0000	1,365.7183	1,365.7183	0.4417		1,376.7609
Total	**1.3498**	**15.0854**	**6.4543**	**0.0141**	**2.2114**	**0.6844**	**2.8958**	**1.1365**	**0.6296**	**1.7662**	**0.0000**	**1,365.7183**	**1,365.7183**	**0.4417**		**1,376.7609**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0300	0.0213	0.1978	5.8000e-004	0.0609	4.2000e-004	0.0613	0.0161	3.8000e-004	0.0165		57.6798	57.6798	1.4900e-003		57.7170
Total	**0.0300**	**0.0213**	**0.1978**	**5.8000e-004**	**0.0609**	**4.2000e-004**	**0.0613**	**0.0161**	**3.8000e-004**	**0.0165**		**57.6798**	**57.6798**	**1.4900e-003**		**57.7170**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**		**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1144	3.5369	0.7780	8.5000e-003	0.2013	0.0158	0.2170	0.0579	0.0151	0.0730		889.9158	889.9158	0.0598		891.4116
Worker	0.7578	0.5377	4.9953	0.0146	1.5366	0.0105	1.5471	0.4076	9.6700e-003	0.4173		1,456.4157	1,456.4157	0.0376		1,457.3552
Total	**0.8723**	**4.0746**	**5.7733**	**0.0231**	**1.7379**	**0.0263**	**1.7641**	**0.4655**	**0.0248**	**0.4903**		**2,346.3315**	**2,346.3315**	**0.0974**		**2,348.7668**

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**	**0.0000**	**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1144	3.5369	0.7780	8.5000e-003	0.2013	0.0158	0.2170	0.0579	0.0151	0.0730		889.9158	889.9158	0.0598		891.4116
Worker	0.7578	0.5377	4.9953	0.0146	1.5366	0.0105	1.5471	0.4076	9.6700e-003	0.4173		1,456.4157	1,456.4157	0.0376		1,457.3552
Total	**0.8723**	**4.0746**	**5.7733**	**0.0231**	**1.7379**	**0.0263**	**1.7641**	**0.4655**	**0.0248**	**0.4903**		**2,346.3315**	**2,346.3315**	**0.0974**		**2,348.7668**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**		**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0958	3.2517	0.6814	8.4200e-003	0.2012	7.9000e-003	0.2091	0.0579	7.5600e-003	0.0655		881.6290	881.6290	0.0571		883.0571
Worker	0.7037	0.4806	4.5477	0.0141	1.5366	0.0102	1.5468	0.4076	9.3900e-003	0.4170		1,405.5795	1,405.5795	0.0336		1,406.4186
Total	**0.7995**	**3.7322**	**5.2291**	**0.0225**	**1.7379**	**0.0181**	**1.7560**	**0.4655**	**0.0170**	**0.4825**		**2,287.2085**	**2,287.2085**	**0.0907**		**2,289.4758**

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	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**	**0.0000**	**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0958	3.2517	0.6814	8.4200e-003	0.2012	7.9000e-003	0.2091	0.0579	7.5600e-003	0.0655		881.6290	881.6290	0.0571		883.0571
Worker	0.7037	0.4806	4.5477	0.0141	1.5366	0.0102	1.5468	0.4076	9.3900e-003	0.4170		1,405.5795	1,405.5795	0.0336		1,406.4186
Total	**0.7995**	**3.7322**	**5.2291**	**0.0225**	**1.7379**	**0.0181**	**1.7560**	**0.4655**	**0.0170**	**0.4825**		**2,287.2085**	**2,287.2085**	**0.0907**		**2,289.4758**

3.5 Building Construction - 2022

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	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0888	3.0867	0.6266	8.3400e-003	0.2012	6.7700e-003	0.2080	0.0579	6.4800e-003	0.0644		873.1304	873.1304	0.0541		874.4823
Worker	0.6573	0.4313	4.1644	0.0136	1.5366	9.9400e-003	1.5466	0.4076	9.1500e-003	0.4168		1,354.2437	1,354.2437	0.0301		1,354.9955
Total	**0.7461**	**3.5180**	**4.7910**	**0.0219**	**1.7378**	**0.0167**	**1.7546**	**0.4655**	**0.0156**	**0.4812**		**2,227.3741**	**2,227.3741**	**0.0842**		**2,229.4778**

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	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**	**0.0000**	**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0888	3.0867	0.6266	8.3400e-003	0.2012	6.7700e-003	0.2080	0.0579	6.4800e-003	0.0644		873.1304	873.1304	0.0541		874.4823
Worker	0.6573	0.4313	4.1644	0.0136	1.5366	9.9400e-003	1.5466	0.4076	9.1500e-003	0.4168		1,354.2437	1,354.2437	0.0301		1,354.9955
Total	**0.7461**	**3.5180**	**4.7910**	**0.0219**	**1.7378**	**0.0167**	**1.7546**	**0.4655**	**0.0156**	**0.4812**		**2,227.3741**	**2,227.3741**	**0.0842**		**2,229.4778**

3.6 Paving - 2022

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	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0423	0.0278	0.2680	8.7000e-004	0.0989	6.4000e-004	0.0995	0.0262	5.9000e-004	0.0268		87.1543	87.1543	1.9400e-003		87.2027
Total	**0.0423**	**0.0278**	**0.2680**	**8.7000e-004**	**0.0989**	**6.4000e-004**	**0.0995**	**0.0262**	**5.9000e-004**	**0.0268**		**87.1543**	**87.1543**	**1.9400e-003**		**87.2027**

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	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205	0.0000	1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**	**0.0000**	**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0423	0.0278	0.2680	8.7000e-004	0.0989	6.4000e-004	0.0995	0.0262	5.9000e-004	0.0268		87.1543	87.1543	1.9400e-003		87.2027
Total	**0.0423**	**0.0278**	**0.2680**	**8.7000e-004**	**0.0989**	**6.4000e-004**	**0.0995**	**0.0262**	**5.9000e-004**	**0.0268**		**87.1543**	**87.1543**	**1.9400e-003**		**87.2027**

3.7 Architectural Coating - 2022

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	112.8123					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**113.0169**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1302	0.0854	0.8246	2.6900e-003	0.3043	1.9700e-003	0.3063	0.0807	1.8100e-003	0.0825		268.1671	268.1671	5.9500e-003		268.3159
Total	**0.1302**	**0.0854**	**0.8246**	**2.6900e-003**	**0.3043**	**1.9700e-003**	**0.3063**	**0.0807**	**1.8100e-003**	**0.0825**		**268.1671**	**268.1671**	**5.9500e-003**		**268.3159**

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	112.8123					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**113.0169**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1302	0.0854	0.8246	2.6900e-003	0.3043	1.9700e-003	0.3063	0.0807	1.8100e-003	0.0825		268.1671	268.1671	5.9500e-003		268.3159
Total	**0.1302**	**0.0854**	**0.8246**	**2.6900e-003**	**0.3043**	**1.9700e-003**	**0.3063**	**0.0807**	**1.8100e-003**	**0.0825**		**268.1671**	**268.1671**	**5.9500e-003**		**268.3159**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Other Non-Asphalt Surfaces	10.00	5.00	7.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.526397	0.037140	0.194621	0.111857	0.019784	0.005283	0.037518	0.055864	0.001328	0.001945	0.006704	0.000686	0.000873
Other Non-Asphalt Surfaces	0.526397	0.037140	0.194621	0.111857	0.019784	0.005283	0.037518	0.055864	0.001328	0.001945	0.006704	0.000686	0.000873

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0987	0.8431	0.3588	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.3084	1,076.3084	0.0206	0.0197	1,082.7043
NaturalGas Unmitigated	0.0987	0.8431	0.3588	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.3084	1,076.3084	0.0206	0.0197	1,082.7043

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	9148.62	0.0987	0.8431	0.3588	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.3084	1,076.3084	0.0206	0.0197	1,082.7043
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0987**	**0.8431**	**0.3588**	**5.3800e-003**		**0.0682**	**0.0682**		**0.0682**	**0.0682**		**1,076.3084**	**1,076.3084**	**0.0206**	**0.0197**	**1,082.7043**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	9.14862	0.0987	0.8431	0.3588	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.3084	1,076.3084	0.0206	0.0197	1,082.7043
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0987**	**0.8431**	**0.3588**	**5.3800e-003**		**0.0682**	**0.0682**		**0.0682**	**0.0682**		**1,076.3084**	**1,076.3084**	**0.0206**	**0.0197**	**1,082.7043**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.1594	0.2625	22.7755	1.2000e-003		0.1261	0.1261		0.1261	0.1261	0.0000	41.0005	41.0005	0.0394	0.0000	41.9862
Unmitigated	5.1594	0.2625	22.7755	1.2000e-003		0.1261	0.1261		0.1261	0.1261	0.0000	41.0005	41.0005	0.0394	0.0000	41.9862

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6182					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.8551					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6862	0.2625	22.7755	1.2000e-003		0.1261	0.1261		0.1261	0.1261		41.0005	41.0005	0.0394		41.9862
Total	**5.1594**	**0.2625**	**22.7755**	**1.2000e-003**		**0.1261**	**0.1261**		**0.1261**	**0.1261**	**0.0000**	**41.0005**	**41.0005**	**0.0394**	**0.0000**	**41.9862**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6182					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.8551					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6862	0.2625	22.7755	1.2000e-003		0.1261	0.1261		0.1261	0.1261		41.0005	41.0005	0.0394		41.9862
Total	**5.1594**	**0.2625**	**22.7755**	**1.2000e-003**		**0.1261**	**0.1261**		**0.1261**	**0.1261**	**0.0000**	**41.0005**	**41.0005**	**0.0394**	**0.0000**	**41.9862**

CalEEMod Version: CalEEMod.2016.3.2

Date: 12/13/2017 10:53 AM

Emerson Hall Replacement Project - Existing Dormitory
Yolo/Solano AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.20	Acre	0.20	8,712.00	0
Apartments Low Rise	250.00	Dwelling Unit	1.50	118,000.00	715

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	55
Climate Zone	2			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	599.32	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Emerson Hall Replacement Project-Existing Dormitory. YSAQMD. Adjust CO2 intensity factor to meet a RPS of 25%.

Land Use - Existing dormitory consists of 500 beds in 250 rooms in a 118,000 gsf building.

Construction Phase - Modeling operations.

Off-road Equipment - Default equipment.

Off-road Equipment - Modeling operations.

Trips and VMT - Modeling operations.

On-road Fugitive Dust - Modeling operations.

Demolition - Modeling operations.

Grading - Modeling operations.

Architectural Coating - Modeling operations.

Vehicle Trips - No trips assumed.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Road Dust - Assumed that 100% of roadways are paved.

Woodstoves - No woodstoves or fireplaces.

Energy Use - Use of historical energy data.

Construction Off-road Equipment Mitigation - Water construction site twice daily.

Water Mitigation - Per UC Davis Drought Response Plan - 20% reduction in water use.

Waste Mitigation - 75% waste diversion goal by 2020 consistent with AB 341 (not mitigation).

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Residential_Exterior	79650	121500
tblAreaCoating	Area_Residential_Interior	238950	364500
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceWoodMass	4,558.40	0.00
tblFireplaces	NumberGas	137.50	0.00
tblFireplaces	NumberNoFireplace	25.00	250.00
tblFireplaces	NumberWood	87.50	0.00
tblLandUse	LandUseSquareFeet	250,000.00	118,000.00
tblLandUse	LotAcreage	15.63	1.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblProjectCharacteristics	CO2IntensityFactor	641.35	599.32
tblRoadDust	RoadPercentPave	94	100
tblSolidWaste	SolidWasteGenerationRate	115.00	126.96
tblTripsAndVMT	WorkerTripNumber	0.00	13.00
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	SU_TR	6.07	0.00
tblVehicleTrips	WD_TR	6.59	0.00
tblWater	IndoorWaterUseRate	16,288,506.41	17,982,511.07
tblWater	OutdoorWaterUseRate	10,268,840.99	11,336,800.46
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	4,558.40	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6319	0.0217	1.8694	1.0000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	3.0322	3.0322	3.0000e-003	0.0000	3.1073
Energy	0.0194	0.1659	0.0706	1.0600e-003		0.0134	0.0134		0.0134	0.0134	0.0000	455.4969	455.4969	0.0164	6.1600e-003	457.7429
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	25.7717	0.0000	25.7717	1.5231	0.0000	63.8484
Water						0.0000	0.0000		0.0000	0.0000	5.7050	37.2382	42.9432	0.5878	0.0142	61.8714
Total	**0.6513**	**0.1876**	**1.9400**	**1.1600e-003**	**0.0000**	**0.0236**	**0.0236**	**0.0000**	**0.0236**	**0.0236**	**31.4768**	**495.7673**	**527.2440**	**2.1303**	**0.0204**	**586.5700**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6319	0.0217	1.8694	1.0000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	3.0322	3.0322	3.0000e-003	0.0000	3.1073
Energy	0.0194	0.1659	0.0706	1.0600e-003		0.0134	0.0134		0.0134	0.0134	0.0000	455.4969	455.4969	0.0164	6.1600e-003	457.7429
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	6.4429	0.0000	6.4429	0.3808	0.0000	15.9621
Water						0.0000	0.0000		0.0000	0.0000	4.5640	29.7906	34.3546	0.4702	0.0114	49.4971
Total	**0.6513**	**0.1876**	**1.9400**	**1.1600e-003**	**0.0000**	**0.0236**	**0.0236**	**0.0000**	**0.0236**	**0.0236**	**11.0070**	**488.3196**	**499.3266**	**0.8704**	**0.0175**	**526.3095**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**65.03**	**1.50**	**5.29**	**59.14**	**13.94**	**10.27**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Parking Lot	10.00	5.00	7.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.507588	0.042853	0.191841	0.130656	0.028854	0.006301	0.028754	0.049812	0.001354	0.002329	0.007758	0.000700	0.001199
Parking Lot	0.507588	0.042853	0.191841	0.130656	0.028854	0.006301	0.028754	0.049812	0.001354	0.002329	0.007758	0.000700	0.001199

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	263.3987	263.3987	0.0128	2.6400e-003	264.5031
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	263.3987	263.3987	0.0128	2.6400e-003	264.5031
NaturalGas Mitigated	0.0194	0.1659	0.0706	1.0600e-003		0.0134	0.0134		0.0134	0.0134	0.0000	192.0982	192.0982	3.6800e-003	3.5200e-003	193.2398
NaturalGas Unmitigated	0.0194	0.1659	0.0706	1.0600e-003		0.0134	0.0134		0.0134	0.0134	0.0000	192.0982	192.0982	3.6800e-003	3.5200e-003	193.2398

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.59979e+006	0.0194	0.1659	0.0706	1.0600e-003		0.0134	0.0134		0.0134	0.0134	0.0000	192.0982	192.0982	3.6800e-003	3.5200e-003	193.2398
Total		**0.0194**	**0.1659**	**0.0706**	**1.0600e-003**		**0.0134**	**0.0134**		**0.0134**	**0.0134**	**0.0000**	**192.0982**	**192.0982**	**3.6800e-003**	**3.5200e-003**	**193.2398**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.59979e+006	0.0194	0.1659	0.0706	1.0600e-003		0.0134	0.0134		0.0134	0.0134	0.0000	192.0982	192.0982	3.6800e-003	3.5200e-003	193.2398
Total		**0.0194**	**0.1659**	**0.0706**	**1.0600e-003**		**0.0134**	**0.0134**		**0.0134**	**0.0134**	**0.0000**	**192.0982**	**192.0982**	**3.6800e-003**	**3.5200e-003**	**193.2398**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	968923	263.3987	0.0128	2.6400e-003	264.5031
Total		**263.3987**	**0.0128**	**2.6400e-003**	**264.5031**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	968923	263.3987	0.0128	2.6400e-003	264.5031
Total		**263.3987**	**0.0128**	**2.6400e-003**	**264.5031**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6319	0.0217	1.8694	1.0000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	3.0322	3.0322	3.0000e-003	0.0000	3.1073
Unmitigated	0.6319	0.0217	1.8694	1.0000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	3.0322	3.0322	3.0000e-003	0.0000	3.1073

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1129					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4614					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0576	0.0217	1.8694	1.0000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	3.0322	3.0322	3.0000e-003	0.0000	3.1073
Total	**0.6319**	**0.0217**	**1.8694**	**1.0000e-004**		**0.0102**	**0.0102**		**0.0102**	**0.0102**	**0.0000**	**3.0322**	**3.0322**	**3.0000e-003**	**0.0000**	**3.1073**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1129					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4614					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0576	0.0217	1.8694	1.0000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	3.0322	3.0322	3.0000e-003	0.0000	3.1073
Total	**0.6319**	**0.0217**	**1.8694**	**1.0000e-004**		**0.0102**	**0.0102**		**0.0102**	**0.0102**	**0.0000**	**3.0322**	**3.0322**	**3.0000e-003**	**0.0000**	**3.1073**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	34.3546	0.4702	0.0114	49.4971
Unmitigated	42.9432	0.5878	0.0142	61.8714

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	17.9825 / 11.3368	42.9432	0.5878	0.0142	61.8714
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**42.9432**	**0.5878**	**0.0142**	**61.8714**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	14.386 / 9.06944	34.3546	0.4702	0.0114	49.4971
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**34.3546**	**0.4702**	**0.0114**	**49.4971**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.4429	0.3808	0.0000	15.9621
Unmitigated	25.7717	1.5231	0.0000	63.8484

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	126.96	25.7717	1.5231	0.0000	63.8484
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**25.7717**	**1.5231**	**0.0000**	**63.8484**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	31.74	6.4429	0.3808	0.0000	15.9621
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**6.4429**	**0.3808**	**0.0000**	**15.9621**

CalEEMod Version: CalEEMod.2016.3.2

Date: 12/13/2017 10:54 AM

Emerson Hall Replacement Project - Existing Dormitory

Yolo/Solano AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.20	Acre	0.20	8,712.00	0
Apartments Low Rise	250.00	Dwelling Unit	1.50	118,000.00	715

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	55
Climate Zone	2			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	599.32	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Emerson Hall Replacement Project-Existing Dormitory. YSAQMD. Adjust CO2 intensity factor to meet a RPS of 25%.

Land Use - Existing dormitory consists of 500 beds in 250 rooms in a 118,000 gsf building.

Construction Phase - Modeling operations.

Off-road Equipment - Default equipment.

Off-road Equipment - Modeling operations.

Trips and VMT - Modeling operations.

On-road Fugitive Dust - Modeling operations.

Demolition - Modeling operations.

Grading - Modeling operations.

Architectural Coating - Modeling operations.

Vehicle Trips - No trips assumed.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Road Dust - Assumed that 100% of roadways are paved.

Woodstoves - No woodstoves or fireplaces.

Energy Use - Use of historical energy data.

Construction Off-road Equipment Mitigation - Water construction site twice daily.

Water Mitigation - Per UC Davis Drought Response Plan - 20% reduction in water use.

Waste Mitigation - 75% waste diversion goal by 2020 consistent with AB 341 (not mitigation).

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Residential_Exterior	79650	121500
tblAreaCoating	Area_Residential_Interior	238950	364500
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceWoodMass	4,558.40	0.00
tblFireplaces	NumberGas	137.50	0.00
tblFireplaces	NumberNoFireplace	25.00	250.00
tblFireplaces	NumberWood	87.50	0.00
tblLandUse	LandUseSquareFeet	250,000.00	118,000.00
tblLandUse	LotAcreage	15.63	1.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblProjectCharacteristics	CO2IntensityFactor	641.35	599.32
tblRoadDust	RoadPercentPave	94	100
tblSolidWaste	SolidWasteGenerationRate	115.00	126.96
tblTripsAndVMT	WorkerTripNumber	0.00	13.00
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	SU_TR	6.07	0.00
tblVehicleTrips	WD_TR	6.59	0.00
tblWater	IndoorWaterUseRate	16,288,506.41	17,982,511.07
tblWater	OutdoorWaterUseRate	10,268,840.99	11,336,800.46
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	4,558.40	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.7871	0.2411	20.7712	1.0900e-003		0.1134	0.1134		0.1134	0.1134	0.0000	37.1381	37.1381	0.0368	0.0000	38.0582
Energy	0.1064	0.9089	0.3868	5.8000e-003		0.0735	0.0735		0.0735	0.0735		1,160.2853	1,160.2853	0.0222	0.0213	1,167.1803
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.8935**	**1.1500**	**21.1580**	**6.8900e-003**	**0.0000**	**0.1869**	**0.1869**	**0.0000**	**0.1869**	**0.1869**	**0.0000**	**1,197.4234**	**1,197.4234**	**0.0590**	**0.0213**	**1,205.2385**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.7871	0.2411	20.7712	1.0900e-003		0.1134	0.1134		0.1134	0.1134	0.0000	37.1381	37.1381	0.0368	0.0000	38.0582
Energy	0.1064	0.9089	0.3868	5.8000e-003		0.0735	0.0735		0.0735	0.0735		1,160.2853	1,160.2853	0.0222	0.0213	1,167.1803
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.8935**	**1.1500**	**21.1580**	**6.8900e-003**	**0.0000**	**0.1869**	**0.1869**	**0.0000**	**0.1869**	**0.1869**	**0.0000**	**1,197.4234**	**1,197.4234**	**0.0590**	**0.0213**	**1,205.2385**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Parking Lot	10.00	5.00	7.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.507588	0.042853	0.191841	0.130656	0.028854	0.006301	0.028754	0.049812	0.001354	0.002329	0.007758	0.000700	0.001199
Parking Lot	0.507588	0.042853	0.191841	0.130656	0.028854	0.006301	0.028754	0.049812	0.001354	0.002329	0.007758	0.000700	0.001199

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1064	0.9089	0.3868	5.8000e-003		0.0735	0.0735		0.0735	0.0735		1,160.2853	1,160.2853	0.0222	0.0213	1,167.1803
NaturalGas Unmitigated	0.1064	0.9089	0.3868	5.8000e-003		0.0735	0.0735		0.0735	0.0735		1,160.2853	1,160.2853	0.0222	0.0213	1,167.1803

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	9862.42	0.1064	0.9089	0.3868	5.8000e-003		0.0735	0.0735		0.0735	0.0735		1,160.2853	1,160.2853	0.0222	0.0213	1,167.1803
Total		**0.1064**	**0.9089**	**0.3868**	**5.8000e-003**		**0.0735**	**0.0735**		**0.0735**	**0.0735**		**1,160.2853**	**1,160.2853**	**0.0222**	**0.0213**	**1,167.1803**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	9.86242	0.1064	0.9089	0.3868	5.8000e-003		0.0735	0.0735		0.0735	0.0735		1,160.2853	1,160.2853	0.0222	0.0213	1,167.1803
Total		**0.1064**	**0.9089**	**0.3868**	**5.8000e-003**		**0.0735**	**0.0735**		**0.0735**	**0.0735**		**1,160.2853**	**1,160.2853**	**0.0222**	**0.0213**	**1,167.1803**

6.0 Area Detail

6.1 Mitigation Measures Area

Category	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
	lb/day										lb/day					
Mitigated	3.7871	0.2411	20.7712	1.0900e-003		0.1134	0.1134		0.1134	0.1134	0.0000	37.1381	37.1381	0.0368	0.0000	38.0582
Unmitigated	3.7871	0.2411	20.7712	1.0900e-003		0.1134	0.1134		0.1134	0.1134	0.0000	37.1381	37.1381	0.0368	0.0000	38.0582

6.2 Area by SubCategory

Unmitigated

SubCategory	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
	lb/day										lb/day					
Architectural Coating	0.6185					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5283					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6403	0.2411	20.7712	1.0900e-003		0.1134	0.1134		0.1134	0.1134		37.1381	37.1381	0.0368		38.0582
Total	**3.7871**	**0.2411**	**20.7712**	**1.0900e-003**		**0.1134**	**0.1134**		**0.1134**	**0.1134**	**0.0000**	**37.1381**	**37.1381**	**0.0368**	**0.0000**	**38.0582**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6185					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5283					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6403	0.2411	20.7712	1.0900e-003		0.1134	0.1134		0.1134	0.1134		37.1381	37.1381	0.0368		38.0582
Total	**3.7871**	**0.2411**	**20.7712**	**1.0900e-003**		**0.1134**	**0.1134**		**0.1134**	**0.1134**	**0.0000**	**37.1381**	**37.1381**	**0.0368**	**0.0000**	**38.0582**

CalEEMod Version: CalEEMod.2016.3.2

Date: 12/13/2017 10:55 AM

Emerson Hall Replacement Project - Existing Dormitory

Yolo/Solano AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.20	Acre	0.20	8,712.00	0
Apartments Low Rise	250.00	Dwelling Unit	1.50	118,000.00	715

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	55
Climate Zone	2			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	599.32	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Emerson Hall Replacement Project-Existing Dormitory. YSAQMD. Adjust CO2 intensity factor to meet a RPS of 25%.

Land Use - Existing dormitory consists of 500 beds in 250 rooms in a 118,000 gsf building.

Construction Phase - Modeling operations.

Off-road Equipment - Default equipment.

Off-road Equipment - Modeling operations.

Trips and VMT - Modeling operations.

On-road Fugitive Dust - Modeling operations.

Demolition - Modeling operations.

Grading - Modeling operations.

Architectural Coating - Modeling operations.

Vehicle Trips - No trips assumed.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Road Dust - Assumed that 100% of roadways are paved.

Woodstoves - No woodstoves or fireplaces.

Energy Use - Use of historical energy data.

Construction Off-road Equipment Mitigation - Water construction site twice daily.

Water Mitigation - Per UC Davis Drought Response Plan - 20% reduction in water use.

Waste Mitigation - 75% waste diversion goal by 2020 consistent with AB 341 (not mitigation).

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Residential_Exterior	79650	121500
tblAreaCoating	Area_Residential_Interior	238950	364500
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceWoodMass	4,558.40	0.00
tblFireplaces	NumberGas	137.50	0.00
tblFireplaces	NumberNoFireplace	25.00	250.00
tblFireplaces	NumberWood	87.50	0.00
tblLandUse	LandUseSquareFeet	250,000.00	118,000.00
tblLandUse	LotAcreage	15.63	1.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblProjectCharacteristics	CO2IntensityFactor	641.35	599.32
tblRoadDust	RoadPercentPave	94	100
tblSolidWaste	SolidWasteGenerationRate	115.00	126.96
tblTripsAndVMT	WorkerTripNumber	0.00	13.00
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	SU_TR	6.07	0.00
tblVehicleTrips	WD_TR	6.59	0.00
tblWater	IndoorWaterUseRate	16,288,506.41	17,982,511.07
tblWater	OutdoorWaterUseRate	10,268,840.99	11,336,800.46
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	4,558.40	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.7871	0.2411	20.7712	1.0900e-003		0.1134	0.1134		0.1134	0.1134	0.0000	37.1381	37.1381	0.0368	0.0000	38.0582
Energy	0.1064	0.9089	0.3868	5.8000e-003		0.0735	0.0735		0.0735	0.0735		1,160.2853	1,160.2853	0.0222	0.0213	1,167.1803
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.8935**	**1.1500**	**21.1580**	**6.8900e-003**	**0.0000**	**0.1869**	**0.1869**	**0.0000**	**0.1869**	**0.1869**	**0.0000**	**1,197.4234**	**1,197.4234**	**0.0590**	**0.0213**	**1,205.2385**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.7871	0.2411	20.7712	1.0900e-003		0.1134	0.1134		0.1134	0.1134	0.0000	37.1381	37.1381	0.0368	0.0000	38.0582
Energy	0.1064	0.9089	0.3868	5.8000e-003		0.0735	0.0735		0.0735	0.0735		1,160.2853	1,160.2853	0.0222	0.0213	1,167.1803
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.8935**	**1.1500**	**21.1580**	**6.8900e-003**	**0.0000**	**0.1869**	**0.1869**	**0.0000**	**0.1869**	**0.1869**	**0.0000**	**1,197.4234**	**1,197.4234**	**0.0590**	**0.0213**	**1,205.2385**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.00	5.00	7.00	46.00	13.00	41.00	86	11	3
Parking Lot	10.00	5.00	7.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.507588	0.042853	0.191841	0.130656	0.028854	0.006301	0.028754	0.049812	0.001354	0.002329	0.007758	0.000700	0.001199
Parking Lot	0.507588	0.042853	0.191841	0.130656	0.028854	0.006301	0.028754	0.049812	0.001354	0.002329	0.007758	0.000700	0.001199

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1064	0.9089	0.3868	5.8000e-003		0.0735	0.0735		0.0735	0.0735		1,160.2853	1,160.2853	0.0222	0.0213	1,167.1803
NaturalGas Unmitigated	0.1064	0.9089	0.3868	5.8000e-003		0.0735	0.0735		0.0735	0.0735		1,160.2853	1,160.2853	0.0222	0.0213	1,167.1803

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	9862.42	0.1064	0.9089	0.3868	5.8000e-003		0.0735	0.0735		0.0735	0.0735		1,160.2853	1,160.2853	0.0222	0.0213	1,167.1803
Total		**0.1064**	**0.9089**	**0.3868**	**5.8000e-003**		**0.0735**	**0.0735**		**0.0735**	**0.0735**		**1,160.2853**	**1,160.2853**	**0.0222**	**0.0213**	**1,167.1803**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	9.86242	0.1064	0.9089	0.3868	5.8000e-003		0.0735	0.0735		0.0735	0.0735		1,160.2853	1,160.2853	0.0222	0.0213	1,167.1803
Total		**0.1064**	**0.9089**	**0.3868**	**5.8000e-003**		**0.0735**	**0.0735**		**0.0735**	**0.0735**		**1,160.2853**	**1,160.2853**	**0.0222**	**0.0213**	**1,167.1803**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.7871	0.2411	20.7712	1.0900e-003		0.1134	0.1134		0.1134	0.1134	0.0000	37.1381	37.1381	0.0368	0.0000	38.0582
Unmitigated	3.7871	0.2411	20.7712	1.0900e-003		0.1134	0.1134		0.1134	0.1134	0.0000	37.1381	37.1381	0.0368	0.0000	38.0582

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6185					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5283					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6403	0.2411	20.7712	1.0900e-003		0.1134	0.1134		0.1134	0.1134		37.1381	37.1381	0.0368		38.0582
Total	**3.7871**	**0.2411**	**20.7712**	**1.0900e-003**		**0.1134**	**0.1134**		**0.1134**	**0.1134**	**0.0000**	**37.1381**	**37.1381**	**0.0368**	**0.0000**	**38.0582**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6185					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5283					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6403	0.2411	20.7712	1.0900e-003		0.1134	0.1134		0.1134	0.1134		37.1381	37.1381	0.0368		38.0582
Total	**3.7871**	**0.2411**	**20.7712**	**1.0900e-003**		**0.1134**	**0.1134**		**0.1134**	**0.1134**	**0.0000**	**37.1381**	**37.1381**	**0.0368**	**0.0000**	**38.0582**

APPENDIX C
CULTURAL RESOURCES STUDY

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CULTURAL RESOURCES REPORT FOR THE UNIVERSITY OF CALIFORNIA DAVIS EMERSON HALL PROJECT

University of California, Davis

PREPARED FOR:

UNIVERSITY OF CALIFORNIA, DAVIS

Campus Planning and Environmental Sustainability
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PREPARED BY:

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ACRONYMS AND ABBREVIATIONS

CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHL	California Historical Landmark
CHRIS	California Historical Resources Information System
City	City of Davis
CRHR	California Register of Historical Resources
HVAC	heating, ventilation, and air conditioning
MLD	most likely descendant
NAHC	Native American Heritage Commission
NRHP	National Register of Historic Places
PRC	California Public Resources Code
project	Emerson Hall Replacement Project
SHPO	State Historic Preservation Officer
UC	University of California

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EXECUTIVE SUMMARY

Dudek was retained by the University of California Davis (UC Davis) to complete a cultural resources study for a project that proposes to demolish the existing Emerson Hall dormitory in the Cuarto neighborhood and replace it with a larger-capacity dormitory to better serve the needs of the UC Davis community. The study involved completion of a California Historical Information System (CHRIS) records search, archival research, a pedestrian survey of the project area, and built-environment documentation.

This study was conducted in accordance with Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, and the project site was evaluated in consideration of California Register of Historical Resources (CRHR) and City of Davis Historic Resources Inventory eligibility and integrity requirements. Furthermore, as required under California Public Resources Code (PRC) Sections 5024 and 5024.5, UC Davis is required to provide notification and submit documentation to the State Historic Preservation Officer (SHPO) for any project having the potential to affect state-owned historical resources on or eligible for inclusion in the Master List. In accordance with PRC Section 5024(a), all properties were evaluated in consideration of the National Register of Historic Places (NRHP) and California Historical Landmark (CHL) criteria and integrity requirements.

The CHRIS records search results indicated that no archaeological or built-environment resources have been previously recorded within the project area. The project as currently designed would not impact any potentially significant archaeological resources, and would not result in a significant effect to archaeological resources. Standard protection measures for unanticipated discoveries of archaeological resources and human remains have been provided (see Section 6.2, below).

Emerson Hall, the subject property, was evaluated for historical significance and appears to be not eligible for inclusion in the NRHP, CRHR, CHL, or local register (6Z) due to a lack of significant historical associations and compromised integrity. This property is not considered a historic resource for the purposes of PRC Section 5024.5. Therefore, the proposed project would not adversely affect state-owned historic resources on the Master List (SHPO concurrence pending). Further, the proposed project would have a less-than-significant impact on historical resources for the purposes of CEQA.

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1 INTRODUCTION

Dudek was retained by the University of California (UC), Davis to complete a cultural resources study for a project that proposes demolition of the 1965 Emerson Hall dormitory on the UC Davis campus in Davis, Yolo County, California (project site) (see Figure 1, Project Location Map). The cultural resources study involved completion of a California Historical Resources Information System (CHRIS) records search, archival research, a pedestrian survey of the project area, and built-environment documentation.

This study was conducted in accordance with Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, and the project site was evaluated in consideration of California Register of Historical Resources (CRHR) and City of Davis Historic Resources Inventory eligibility and integrity requirements. Furthermore, as required under California Public Resources Code (PRC) Sections 5024 and 5024.5, UC Davis is required to provide notification and submit documentation to the State Historic Preservation Officer (SHPO) for any project having the potential to affect state-owned historical resources on or eligible for inclusion in the Master List. In accordance with PRC Section 5024(a), all properties were also evaluated in consideration of the National Register of Historic Places (NRHP) and California Historical Landmark (CHL) criteria and integrity requirements. Finally, the property was evaluated against City of Davis Code Chapter 40.23.060, Davis Register of Historic Resources Designation criteria and integrity requirements.

1.1 Project Description

The proposed Emerson Hall Replacement Project (project) would replace the aging 118,000-gross-square-foot Emerson Hall on the UC David campus with a new 180,000-gross-square-foot residence hall composed of approximately 350 rooms capable of housing 700 to 800 students and associated support spaces. Upon opening, the replacement building would configure 20% of the rooms for triples, but all rooms would be sized for tripling so additional rooms could be converted in the future to increase capacity and maintain affordability. The new residence hall would allow the campus to offer the same high level of academic support, counseling, student activities, and other amenities at Emerson Hall that are available at its other freshmen residential facilities.

Emerson Hall is located in the Cuarto neighborhood. Over the past decade, the Davis campus has planned and implemented redevelopment projects in the Cuarto residential neighborhood, including investments in a series of dining and housing projects that have improved and densified the neighborhood. The existing Emerson Hall accommodates up to 500 beds in 250 rooms, which cannot currently be tripled due to the room size. Emerson Hall was constructed in 1965 by a private developer and was acquired by UC Davis in 1986. The structure has many building deficiencies, and is at the end of its useful service life. Building system deficiencies include insufficient heating, ventilation, and air conditioning (HVAC); plumbing; lighting; fire suppression; and telecommunications and high-speed internet access; and possible hazardous materials. Program deficiencies include lack of space for advising, academic support, and study and student life activities critical to first-year student success. The existing Emerson Hall would be demolished to make room for the replacement building.

The proposed project would complete the redevelopment of the Cuarto neighborhood, increase site density, and leverage previous investments in dining capacity and other central facilities shared between Thoreau Hall, Emerson Hall, and the Webster Hall Replacement Project, currently under construction.

1.2 Project Location

The project site consists of a three-story dormitory located in the Cuarto neighborhood northwest of the UC Davis core campus (see Figure 1, Project Location). The project site is bordered by Wake Forest Drive to the north, Oxford Circle to the east, Oxford Circle and the Cuarto Dining Commons to the south, and a parking area then the north building of the University Court Apartments (545 Sycamore Lane) to the east. The parcels is located on Oxford Circle (see Figure 2, Site Map). The project site is located within Township 8 North, Range 2 East, and Section 9 of the U.S. Geological Survey 7.5-minute Merritt Quadrangle.

1.3 Regulatory Setting

State

Public Resources Code Sections 5024 and 5024.5

PRC Sections 5024 and 5024.5 provide the following guidance:

- 5024 (a–h): Describes the process of inventorying and evaluating state-owned historical resources in consultation with the SHPO.
- 5024.5 (a–g): Describes the process of identifying adverse effects and development of alternatives and mitigation for state-owned historical resources in consultation with, and as determined by, the SHPO.

Review of Projects Affecting State-Owned Historical Resources

Under PRC Sections 5024(f) and 5024.5, state agencies must provide notification and submit documentation to the SHPO early in the planning process for any project having the potential to affect state-owned historical resources on or eligible for inclusion in the Master List (buildings, structures, landscapes, archaeological sites, and other nonstructural resources). Under PRC Section 5024(f), state agencies request the SHPO's comments on the project.

Under PRC Section 5024.5, it is the SHPO's responsibility to comment on the project and to determine if it may cause an adverse effect (PRC Section 5024.5), defined as a substantial adverse change in the significance of a historical resource (PRC Section 5020.1(q)). In this case, historical resources are defined as resources eligible for or listed in the NRHP and/or resources registered for or eligible for registering as a CHL.

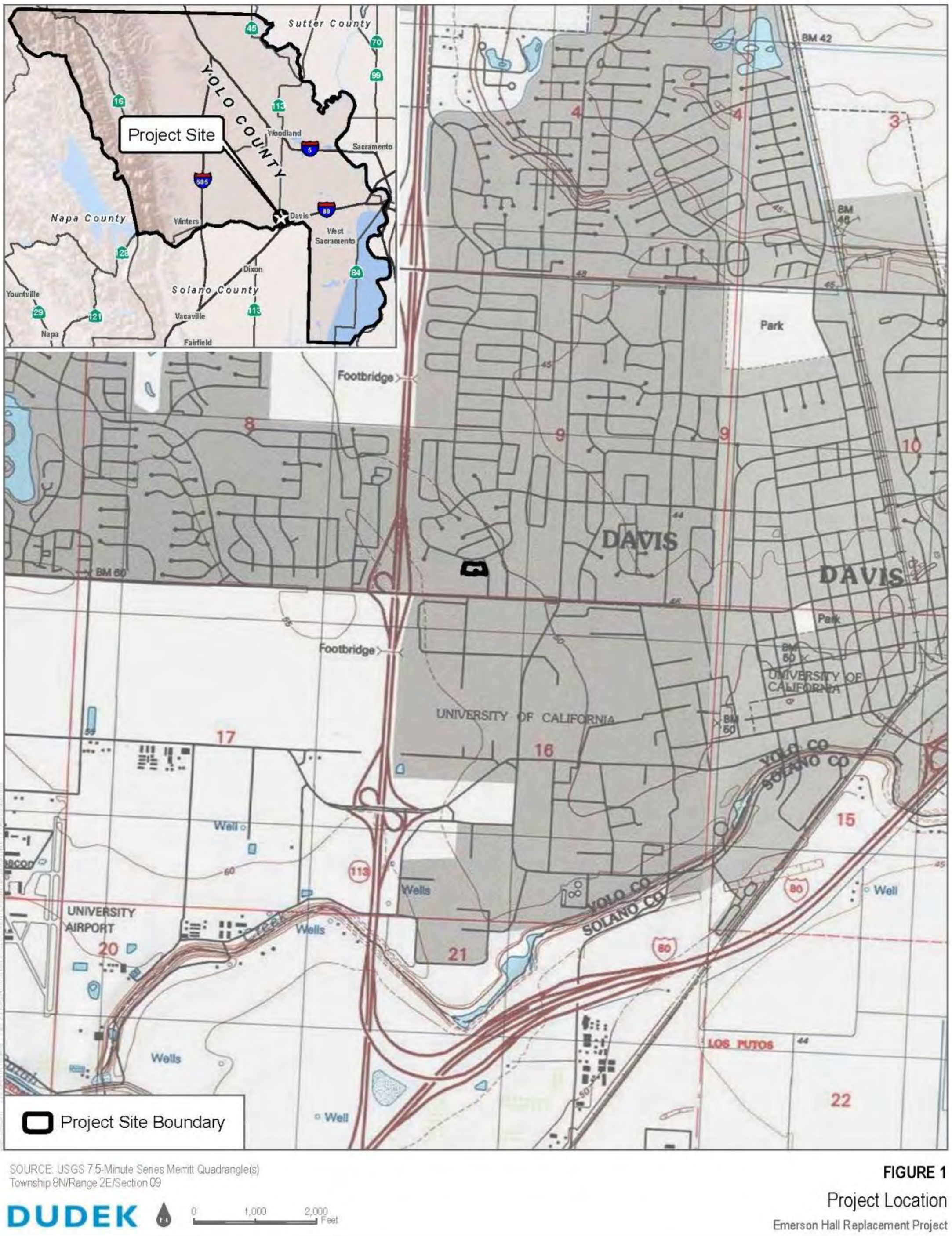

Figure 1. Project Location

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Figure 2. Site Map

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National Register of Historic Places

Although there is no federal nexus for this project, the subject properties were evaluated in consideration of the NRHP designation criteria and integrity requirements to comply with PRC Sections 5024 and 5024.5. The NRHP is the United States' official list of districts, sites, buildings, structures, and objects worthy of preservation. Overseen by the National Park Service under the U.S. Department of the Interior, the NRHP was authorized under the National Historic Preservation Act, as amended. Its listings encompass all National Historic Landmarks and historic areas administered by the National Park Service.

NRHP guidelines for evaluation of historic significance were developed to be flexible and to recognize the accomplishments of all who have made significant contributions to the nation's history and heritage. Its criteria are designed to guide state and local governments, federal agencies, and others in evaluating potential entries in the NRHP. For a property to be listed in or determined eligible for listing, it must be demonstrated to possess integrity and to meet at least one of the following criteria listed below:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in NRHP guidance, *How to Apply the National Register Criteria for Evaluation*, as "the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity" (NPS 1990). NRHP guidance further states that properties must have been completed at least 50 years ago to be considered for eligibility. Properties completed fewer than 50 years before evaluation must be proven to be "exceptionally important" (criteria consideration G) to be considered for listing (NPS 1990).

California Historical Landmarks

CHLs are buildings, structures, sites, or places that have been determined to have statewide historical significance by meeting at least one of the criteria listed below (OHP 2017):

- The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).
- Associated with an individual or group having a profound influence on the history of California.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

The resource also must have written consent of the property owner, be recommended by the State Historical Resources Commission, and be officially designated by the Director of California State Parks. CHLs #770 and above are automatically listed in the CRHR (OHP 2017).

California Register of Historical Resources

In California, the term "historical resource" includes "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC Section 5020.1(j)). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated below. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource younger than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see California Code of Regulations, Title 14, Section 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

As described further below, the following CEQA statutes and guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource"; it also defines the circumstances when a project would materially impair the significance of an historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC Sections 21083.2(b)-(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for the purposes of CEQA (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project does any of the following (CEQA Guidelines Section 15064.5(b)(2)):

1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any historical resources, then evaluates whether that project would cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2(a), (b), and (c)).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC Sections 21074(c) and 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC Section 5097.98.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the County Coroner has examined the remains (Health and Safety Code Section 7050.5b). PRC Section 5097.98 outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the Native American Heritage Commission (NAHC) within 24 hours (Health and Safety Code Section 7050.5c). The NAHC would notify the most likely descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Local

Local level designations are handled by the City of Davis (City) Landmarks Commission. The City's Landmarks Commission decides whether a property should be a designated Structure of Merit or Landmark, and makes a recommendation to City Council on Historic District designation, based on certain required findings contained in the Landmarks Ordinance. These official designations are for resources that are considered locally significant historic sites or areas (City of Davis 2017).

Landmarks are considered to have the highest level of individual historical or architectural significance. Therefore, along with contributing buildings located within historic districts, Landmarks are offered the highest protection with respect to alterations and demolitions. Structures of Merit are historic resources with a more limited degree of individual significance. This designation requires special review for demolition permits (City of Davis 2017).

Historic Districts are geographic areas or noncontiguous groupings of thematically related properties significant in that they contribute to the historic character of the area at a local level. Any area in the City can be designated a Historic District subject to the approval of City Council (City of Davis 2017).

City of Davis Municipal Code, Chapter 40.23.060, Davis Register of Historic Resources Designation Criteria

a) **Landmarks**. Upon the recommendation of the historical resources management commission and approval of the city council a historical resource may be designated a landmark if the resource meets any of the following four criteria at the local, state, or national level of significance and retains a high level of historic integrity as defined by this article:

   1) Associated with events that have made a significant contribution to the broad patterns in the history of Davis, California, or the nation; or

2) Associated with the lives of significant persons in the history of Davis, California, or the nation; or

3) Embodies the distinctive characteristics of a type, period, architectural style or method of construction; or that represents the work of a master designer; or that possesses high artistic values; or that represents a significant and distinguishable entity whose components may lack individual distinction; or

4) Has yielded or may likely yield archaeological or anthropological information important in the study of history, prehistory, or human culture.

b) **Landmark factors to be considered**. In determining whether to designate a resource a landmark, the following factors should be considered, if applicable:

1) A resource moved from its original location may be designated a landmark if it is significant primarily for its architectural value or it is one of the most important surviving structures associated with an important person or historic event.

2) A birthplace or grave may be designated a landmark if it is that of a historical figure of outstanding importance within the history of Davis, the state or the nation and there are no other appropriate sites or resources directly associated with his or her life or achievements.

3) A reconstructed building may be designated a landmark if the reconstruction is historically accurate and is based on sounds historical documentation, is executed in a suitable environment, and if no other original structure survives that has the same historical association.

4) A resource achieving significance within the past fifty years may be designated a landmark if the resource is of exceptional importance within the history of Davis, the state or the nation.

c) **Merit resources**. Upon the recommendation of the historical resources management commission and approval of the city council a historical resource may be designated a merit resource if the resource meets one of the following four criteria at the local level of significance and possesses historic integrity as defined under this article:

1) Associated with events that have made a significant contribution to the broad patterns in the history of Davis; or

2) Associated with the lives of significant persons in the history of Davis; or

3) Embodies the distinctive characteristics of a type, period, architectural style or method of construction; or that represent the work of a master designer; or that possess high artistic values; or that represents a significant and distinguishable entity whose components may lack individual distinction; or

4) Has yielded or may likely yield archaeological or anthropological information important in the study of history, prehistory, or human culture.

d) **Merit resources factors to be considered**. In determining whether to designate a resource a merit resource, the following factors should be considered, if applicable:

1) A resource moved from its original location may be designated a merit resource if it is significant for its architectural value or if an understanding of the associated important person or historic event has not been impaired by the relocation.

2) A birthplace or grave may be designated a merit resource if it is that of an historical figure of outstanding importance within the history of Davis and there are no other appropriate sites or resources directly associated with his or her life or achievements.

3) A reconstructed building may be designated a merit resource if the reconstruction is historically accurate and is based on sound historical documentation, is executed in a suitable environment, and if no other original structure survives that has the same historical association.

4) A resource achieving significance within the past fifty years may be designated a merit resource if it is of exceptional importance within the history of Davis.

e) **Historic districts**. Upon the recommendation of the historical resources management commission and approval of the city council a group of historical resources may be designated an historic district if the district meets any of the following significance criteria:

1) Associated with events that have made a significant contribution to the broad patterns in the history of Davis, California, or the nation; or

2) Associated with the lives of significant persons in the history of Davis, California, or the nation; or

3) Embodies the distinctive characteristics of a type, period, architectural style or method of construction; or that represent the work of a master designer; or that possess high artistic values; or that represents a significant and distinguishable entity whose components may lack individual distinction; or

4) Has yielded or may likely yield archaeological or anthropological information important in the study of history, prehistory, or human culture.

f) **Historic district factors to be considered**. In determining whether to designate a group of resources as an historic district, the following factors should be considered, if applicable:

1) To be designated an historic district a grouping of historical resources must meet one of the above four criteria at the local, state, or national level of significance and the majority of the historic district contributors must retain historic integrity. The collective value of the district contributors may be greater than the individual resources within the historic district;

2) An historic district plan shall be developed and reviewed by the historical resources management commission simultaneously with designation. The historic district plan shall provide standards for review within that particular district to ensure that new development, renovation, and rehabilitation are compatible and complementary to the prevalent character-defining features, architectural style, historic context, and design elements within the historic district;

3) The historic district contributors are identified in the designation materials and the district plan including buildings, sites, structures, objects, or cultural landscapes that add to the historic

architectural qualities, historic associations or patterns for which an historic district is significant and that are located within the district boundaries;

4) The historic district non-contributors are identified in the designation materials and the district plan including buildings, sites, structures, objects and landscapes within the district boundaries that do not add to the historic architectural qualities, historic association or patterns for which the historic district is significant;

5) The historic district boundaries and period of significance are identified in the designation materials and the district plan (City Ordinance 1270 Section 2; Ordinance 1784 Section 1; Ordinance 2124 Section 1, 2003).

1.4 Project Personnel

This evaluation report was prepared by Dudek architectural historians Kate Kaiser, MSHP; Sarah Corder, MFA; and Samantha Murray, MA, who exceed the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61) for architectural history. Archaeological report sections and recommendations provided in this report were contributed by William Burns, MSc, RPA, and Adam Giacinto, MA, RPA, who exceed the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61) for archaeology. Personnel qualifications are provided in Appendix A, Preparer's Qualifications.

2 HISTORIC CONTEXT

2.1 Historical Overview of the City of Davis

The first inhabitants of the Davis area were Patwin people. By 1980, at least 130 Patwin settlement archaeological sites had been found in Yolo County, some on current UC Davis property. Patwin made contact with European settlers in the 1770s when Spanish missionaries from San Francisco attempted to exert their control over tribes in the area. In 1833, a malaria epidemic decimated much of the Patwin population in the Davis area and along the Sacramento River (Brunzell 2015; Lofland 2004).

Juan Manual Vaca and Juan Felipe Peña were the next recorded settlers, relocating to the area from Mexico in the 1840s. Vaca and Peña received a 12,000-acre land grant from the Mexican government in 1843, thereafter known as Rancho de los Putos. Vaca's son, Manuel Vaca, received a land grant for the area north of his father, and this became known as Rancho Laguna de Santos Calle. The town of Davis would later be built on Rancho Laguna de Santos Calle. With farming and agriculture already established on the lands, American Joseph Chiles bought a portion of Rancho Laguna de Santos Calle from Manuel Vaca and sold it to his son Jerome Davis in 1854. This ranch became known as the Davis Ranch. As the rest of Yolo County was settled after California became a state in 1850, farming and dairying became important industries in the area (Brunzell 2015; Lofland 2004).

In the 1860s, railroad investors began planning a northbound route for the California Pacific Railroad, and in 1868, the tracks reached the area that would become Davis. Yolo County inhabitants supported the incoming railroad and the economic advantages associated with construction of the railroad. In 1867, landowner Jerome Davis mortgaged a portion of his land to the California Pacific Railroad. In 1868, Davis defaulted on a payment to the railroad and the railroad assumed control of the mortgaged land. The mortgage holders renamed themselves the Davis Land Company and used the new land to plat a town site to be named "Davisville," adjacent to the railroad. By the end of the 1868, Davisville had 400 residents and a railroad depot along Putah Creek (Figure 3) (Brunzell 2015; Lofland 2004).

In the end of the 19th century, Davisville's role remained deeply intertwined with the railroad. Industrial activity along the tracks and shipping of agricultural products composed most of the economic activity in town. Supporting industries such as blacksmithing, livery stables, wagon makers, hospitality industries, saloons, and restaurants also served the shipping industry. The town's population grew at a modest rate of 10 new citizens per year, and the growth was easily accommodated by the originally platted town site (Brunzell 2015; Lofland 2004).

Figure 3. Davis Depot (glass plate, pre-1908; Center for Sacramento History Catalog No. 1977/089/005)

At the turn of the 20th century, Davisville was chosen as the site for the University of California's University Farm. In recognition of Davisville's changing importance to the state, the local newspaper publisher shortened the town name to "Davis." This change was reflected by the Post Office's adoption of the name in 1907. With incoming students expected, Davis experienced a significant economic boost from the establishment of the University Farm. In 1917, Davis incorporated as a city and began a long-term development plan. The City of Davis began to expand north and west, and downtown Davis replaced wood structures with new masonry banks, theatres, commercial buildings, and churches. Residential growth also typified the first few decades of the 20th century. Ranchers subdivided their properties to create residential neighborhoods on the fringes of Davis (Brunzell 2015; Lofland 2004).

Growth slowed somewhat during the Great Depression and World War II. Because of University Farm's mission, Davis locals, professors, and nearby farms made an effort to expand food production to help the war effort. The U.S. Army took over the campus briefly in 1943 for its Signal Corps, increasing the military presence in the town. After World War II, Davis's population and economy saw a similar boost to what other California towns were experiencing. Davis's proximity to Sacramento and the growing university made it attractive for housing construction and development. By the 1940s, Davis City planners called for the annexation of subdivisions and agricultural land surrounding the town, tripling its original 1868 size. Six new subdivisions were developed from 1946 to 1948. The national trend of suburban development and car-centric subdivision modeling also took place in Davis in the 1950s, and multi-family housing zones began to emerge. In a 1953 map, the majority of Davis was zoned for duplex and multi-family residential (Ames and McClelland 2002; Brunzell 2015; City of Davis 1953).

In addition to the housing boom, commercial development and academic development increased in the 1950s and 1960s. This is a result of the University of California Regents declaration in 1959 that the University Farm would become a general campus. Following the residential growth and university growth during the 1950s, additional City services and municipal controls were put in place. In 1961, the City released a Core Area Plan, and expanded downtown Davis into a high-density area that included high-rise residential development and commercial blocks. The new high-density area allowed for the construction of apartments and duplexes to support the influx of new staff and instructors for UC Davis. Growth outside of the densifying downtown core also occurred. Semi-private cluster developments typified residential development outside the City center. By 1970, Davis had more than 23,000 citizens, and half of these worked in the education industry (Brunzell 2015).

The City adopted a new General Plan in 1973 to curb the explosive growth of the 1960s. The new plan focused mainly on growth control and energy conservation, a result of the statewide and national energy crises and environmental movements of the time. The new plan restricted growth to zones in north and west Davis, and restricted advertising in an attempt to slow incoming population growth. Regardless of these efforts to control growth, UC Davis continued to grow and develop, and by 1975, the student enrollment for UC Davis was up to 16,000, which was nearly half of the total 1975 population for Davis (Brunzell 2015; Fitch 1998).

As this surge of growth occurred at UC Davis, the City continued to attempt to limit growth. In 1986, voters successfully limited growth to the slowest rate legally allowed by California. In 1995, voters again were able to successfully prevent the construction of a large golf course and living community development that would have been built in north Davis. By 2010, the City's population was just over 50,000 and well within the adopted long-term-goal range. As of 2017, the City's population and major industries continue to support UC Davis and its more than 30,000 students (Brunzell 2015; Fitch 1998).

2.2 Historical Overview of Housing at University of California, Davis

In 1905, the California State Legislature passed a bill authorizing the Regents of University of California to establish a University Farm School in Davisville, California. By 1907, the university raised the money, land, and water rights necessary to begin developing buildings. Short courses began the following fall in 1908 at the Farm School, and classes officially began in January 1909 with 40 students. The North Hall dormitory opened the same year (Figure 4), and dormitories established the Farm School as a destination school that was not only for local farmers and Yolo County citizens. Two other dormitories, South Hall and West Hall, quickly followed as the student population grew, and the Farm School began to accept women as students. Each dormitory had a capacity for 67 students (UC Davis 2008, 2017a, 2017b).

Figure 4. North Hall Dormitory at University Farms, Davis (negative, glass plate; photographer: McCurry Foto Co., 1910; Center for Sacramento History Catalog No. 1998/723/089)

Throughout its early history, the university experienced multiple name changes. For instance, in 1922, the University Farm School became the Northern Branch of the College of Agriculture, followed by the name change to the College of Agriculture at Davis in 1938 (Dingemans and Scheuring 2013; Golden 2013; UC Berkeley 2004; UC Davis 2008).

World War II temporarily interrupted the university's growth with the suspension of all undergraduate studies during the war when the U.S. Army's Signal Corps controlled the campus. During the war years, the campus was known as Camp Kohler. Following the war, classes resumed in fall 1945. By 1946, there was an influx of students, with 1,516 undergraduate enrollees and 87 graduate enrollees for the fall term. The post-war years also saw the addition of different schools of study at the university, including a Veterinary Medicine School in 1946 and a College of Letters and Science in 1951 (Dingemans and Scheuring 2013; Golden 2013; UC Davis 2008).

Expansion of the university and the student body called for more on-campus living opportunities. In 1947, like many campuses throughout California, UC Davis acquired World War II surplus buildings to use as dormitories, which became Ash Hall, Birch Hall, and Cedar Hall (Figure 5). The same year, three large houses near downtown Davis were used as cooperative housing, and Aggie Villa at 2nd and B Streets opened to married students. These newly acquired houses and halls helped the university house new students using the G.I. Bill (Dingemans and Scheuring 2013; UC Davis 2017b).

Figure 5. Ash, Birch, and Cedar Halls at University Farms, Davis (negative, circa 1948) (UC Davis 2017c)

During the 1950s, the university began to construct dormitory buildings to accommodate more than 200 students per building. The first were Beckett and Hughes Halls in 1951, which accommodated 203 people each. Struve Hall, a 205-person dormitory, followed in 1954. The same year, West Hall, one of the original three UC Davis dormitories, was razed. Titus Hall, another 203-person dormitory, was built in 1959. Construction of these high-density dormitories also allowed for the closure of cooperative off-campus housing by 1951 (Golden 2013; UC Davis 2017b; UC Berkeley 2004).

In 1959, the University of California Regents declared that the College of Agriculture at Davis would become a general campus of the University of California. At the time of the declaration, there were 1,813 undergraduate students and 609 graduate students. UC Davis added a separate graduate school in 1961, an engineering school in 1962, a law school in 1964, and a school of medicine in 1965. Despite the addition of several other schools, UC Davis kept its agricultural roots, boasting 3,700 acres for agricultural experimentation in the 1960s. Student enrollment jumped to more than 2,800 in 1960, more than 3,400 in 1961, more than 4,000 in 1962, and more than 4,800 in 1963, and continued to see dramatic increases in the 1960s (Golden 2013; UC Davis 2017a; UC Berkeley 2004).

With the increases in enrollment throughout the 1960s, additional dormitories were needed, and in 1960, four dormitory halls that make up the Segundo grouping were opened. The four buildings together housed 820 students. Deviating from the traditional dormitory model, in 1964, the Solano Park Apartments opened 275 units intended to be occupied by families using federal funds from the U.S. Housing and Home Finance

Agency. Orchard Park, another family apartment complex marketed to married students, opened the same year with 200 furnished apartments (UC Davis 2017b).

In 1965, with 7,723 students enrolled, UC Davis appointed a Director of Housing to oversee on-campus housing and dormitories. Previously, a Dean of Men and a Dean of Women were responsible for student housing. Under the new Director of Housing, Regan Hall, a complex of nine buildings that included seven dormitories, was built for the increasing student body. Regan dormitories represented the first use of a small apartment-house-type cluster on campus (Figure 6). Each of the seven buildings housed 60 students. The same year, UC Davis contracted with privately operated dormitories for student housing for Emerson Hall, Webster Hall, and Heritage House (Golden 2013; UC Davis 2017b, 2017c).

Figure 6. Regan Halls (negative, circa 1965) (UC Davis 2017c)

In 1967, Pierce and Thille Halls opened, each consisting of six 70-student-capacity buildings and housing up to 840 students. In 1969, Malcolm Hall and Castilian Hall opened. Lysle Leach Hall opened in 1970 and provided housing for 180 graduate students (UC Davis 2015, 2017b).

At the end of the 1960s, despite explosive growth of the student body, some older dormitories were decommissioned and razed: Ash Hall, Birch Hall, Cedar Hall, and Aggie Villa. As a result, there was a shortage of on- and off-campus housing, causing a minor crisis for the housing office in 1972. Despite this housing shortage and the increase in enrollment between 1972 and 1985, UC Davis housing construction and acquisition stopped until 1985, with the exception of the Baggins End cooperative living community. In 1985, the UC Davis collaborated with private companies to open the Russell Park Apartments and the LaRue Park Apartments in 1986. Also in 1986, the university acquired privately owned Emerson Hall, Webster Hall, and Oxford Circle Dining Commons (Glover 1986; UC Davis 2015, 2017b).

During the most recent 20 years, UC Davis continued to replace older dormitories with new dormitories. The university also continued to collaborate with privately owned dormitory and apartment complex owners to meet student housing requirements. From 1997 to 2017, UC Davis razed seven dormitories, built 16 new university-owned dormitories, renovated or remodeled six dormitories, and collaborated with three privately owned apartment complex owners for student housing. From 1997 to 2015, enrollment increased by more than 10,000 students, to 33,428 graduate and undergraduate students. Despite current enrollment numbers, according to the UC Davis Housing Office, only 11,000 of those students live on campus (UC Davis 2015, 2017b, 2017d).

2.3 Historical Overview of Emerson Hall, University of California, Davis

Acquiring and Planning the Site

The subject property, Emerson Hall, is one of three dormitories built in 1965. Together with Webster Hall and Heritage House, as well as Thoreau Hall built in 1988, the buildings comprise the Cuarto Area residence halls, northwest of the central UC Davis campus. Emerson Hall, Webster Hall, and Heritage House were originally privately built and operated dormitories in a partnership with UC Davis. All three were designed by Buzz Garcia and built by developer Robert C. Powell in 1965 (Figure 7). The halls were planned as "perimeter buildings," built in a square around a recreational courtyard and pool, with the residential units forming the square built as close to the lot lines as possible. Decoration was limited to the shingled, false mansard roof; the window treatments; and the "sudden opening of a façade" on the interior court for the inset balcony. Garcia, the architect, won an award for his design at a building design show. The building also featured interior design and furnishings chosen by Jeanette Powell, wife of developer Robert C. Powell. The dormitory was originally intended as a women's dormitory and could house up to 600 students. They also included office spaces and dining halls. According to UC Davis history, the dormitory was constructed in 1965, and was owned and operated by private real estate developer Robert C. Powell, but no original building permits or deeds are available. Emerson Hall opened to women in fall 1966, before completing construction, but the next school year was open to both men and women. In 1986, UC Davis formally acquired Emerson Hall, Webster Hall, and Heritage House. UC Davis renovated the halls when they received them in September 1986. Heritage House was renovated into the Oxford Circle Dining Commons in 1989, and again into the Cuarto Dining Commons in 2010. Webster Hall was demolished in 2015 (Boyle 1966; Freshwater 1965a, 1965b; Glover 1986; Sacramento Bee 1965a, 1965b, 1965c, 1965d; Silva 1968; UC Davis 2017b).

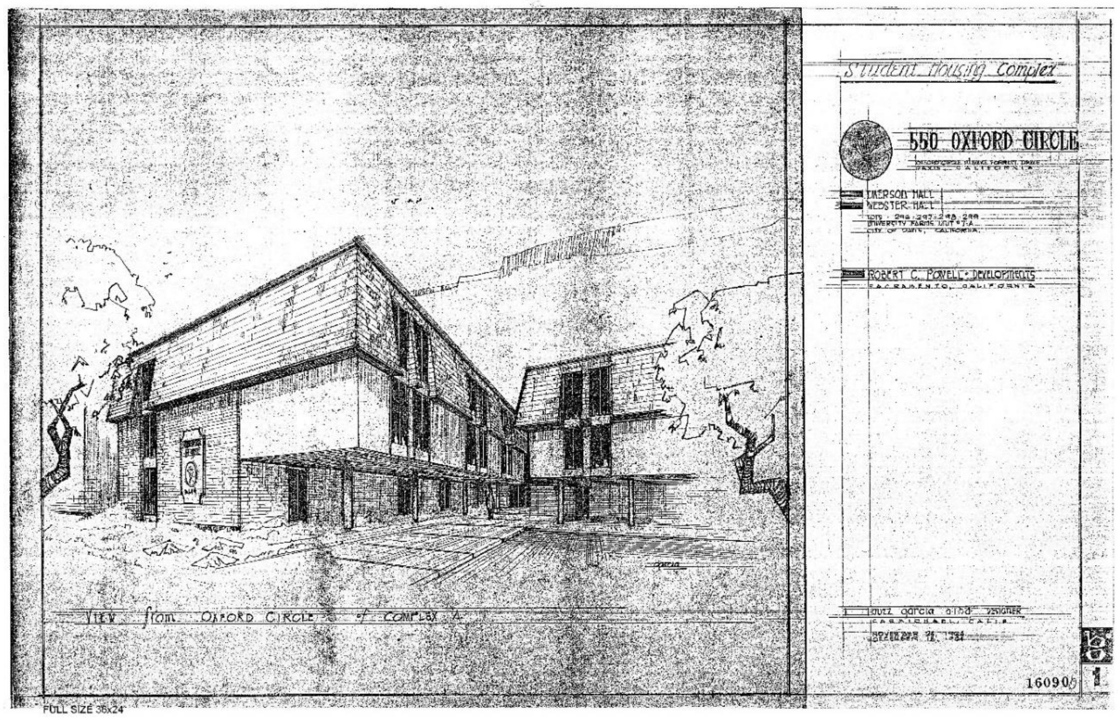

Figure 7. Top Sheet of Architectural Plans for Emerson and Webster Halls Showing Neo-Mansard Roof Design; November 24, 1964 (Garcia 1964)

Alterations to the Building and Site

In 1986, UC Davis acquired and renovated Emerson Hall, Webster Hall, and Heritage House through third-party company Helper Real Estate Investments of Moraga. According to the Facilities Management Department records, renovations were extensive. Many of these renovations were minor and included repainting (1987, 1992, 1993, 1998, 1999), window replacement (in-kind materials) (1994, 2006), increasing accessibility (1990, 1992, 2001), and shower and tub replacement (1987, 1991, 2001). Several renovation projects are of note because of the loss of original materials or changes to physical appearance. In 1989, the UC Davis Physical Plant added an HVAC system and ducting, which pierced the roof and tore out old ducting in all the dormitory rooms. In 1992, the UC Davis Physical Plant performed asbestos abatement, which involved replacing interior sheetrock walls, T-grid ceilings, and repainting the building. Also in 1992, the Physical Plant removed the original south entry doors and replaced with sliding glass and metal doors. Previously they had been outward-swinging wood doors with decorative and trim paneling. In 1998, UC Davis contracted Fisher Friedman Associates from San Francisco to conduction seismic renovations of Emerson and Webster Halls. This renovation involved the complete removal of the shingled, Mansard-style roof and wall cladding, which significantly altered the appearance of Emerson Hall (Figure 8). The cladding was replaced with "plaster" cladding with equally spaced control joints. At this time, metal awnings were also added to windows and painted metal trellises were added to the south elevation landscaping and above the third-story windows on the south elevation. In the interior courtyards, exterior walkways were altered to remove the low, solid plastered wall, partially enclosing the walkway. The plaster wall was replaced with a metal railing. The Fisher Friedman and Associates project lasted from 1999–2000 and significantly changed the physical appearance of Emerson Hall, causing it to appear as a 21st Century Modernism: Découpage-style building (Figure 9) (Fisher Friedman Associates 1998; Glover 1965, 1986; Garcia 1964; UC Davis Physical Plant 1987, 1989, 1990, 1992a, 1992b, 1992c, 1992d, 1992e, 1993, 1994a, 1994b, 1998, 2001, 2006).

Architect: Louis "Buzz" Garcia (1936–Present)

Louis "Buzz" Garcia was the architect for Emerson and Webster Halls, contracted by builder/developer Robert C. Powell. Garcia was born Seattle 1936 to farming parents, and moved to Elk Grove, California, in 1940. He attended Sacramento Junior College before going to California State Polytechnic College in San Luis Obispo for architecture, and the University of Washington for the same. Garcia's architecture career began in Seattle after graduation from the University of Washington, where he worked for architecture firm Young, Richardson & Carleton in 1958. In 1959, Garcia returned to Sacramento after accepting a job with the Sacramento County Planning Department. From 1960 through 1963, Garcia worked with Sacramento area architecture firms Robert M. Keenan Associates and Keenan and Shaw Inc., where he managed offices and produced original designs (Burns 1969; Sacramento Bee 1973a).

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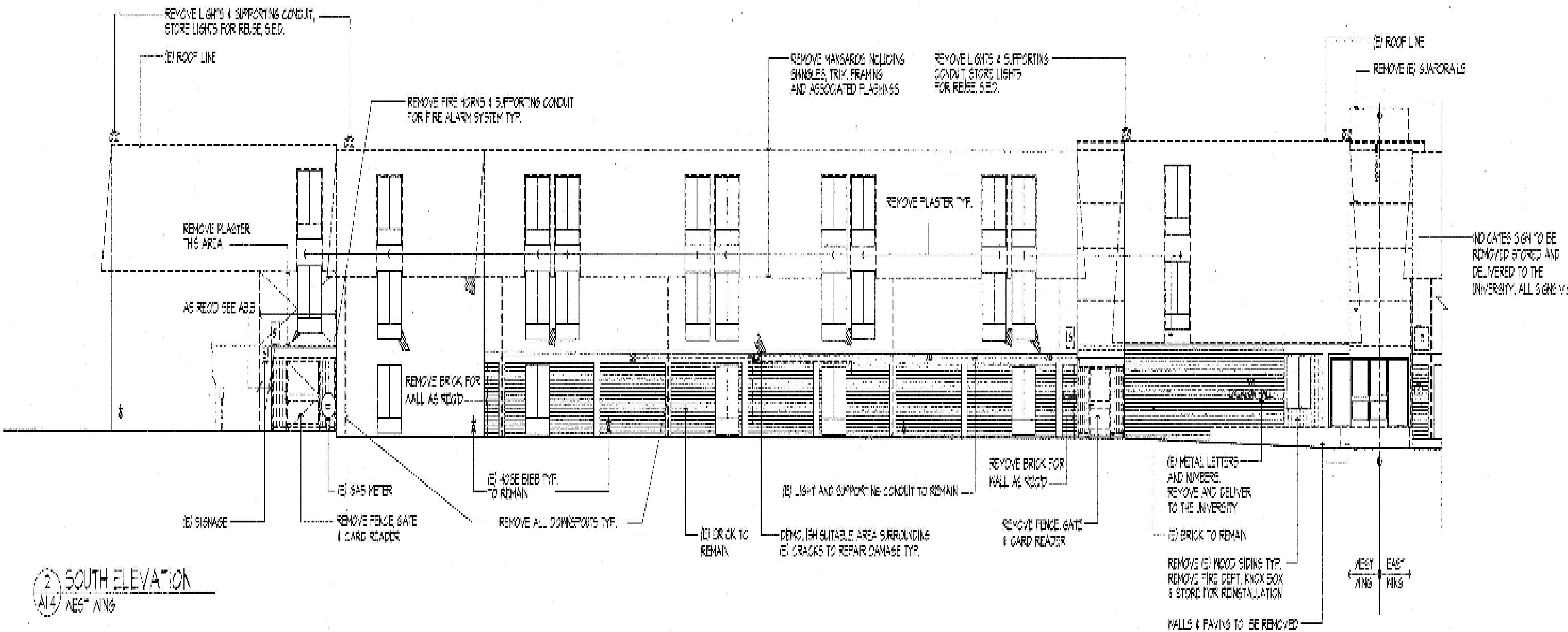

Figure 8. Detail of page A.3.1 of Fisher Friedman Plans to Remove Mansard Roof; January 28, 1998 (Fisher Friedman Associates 1998)

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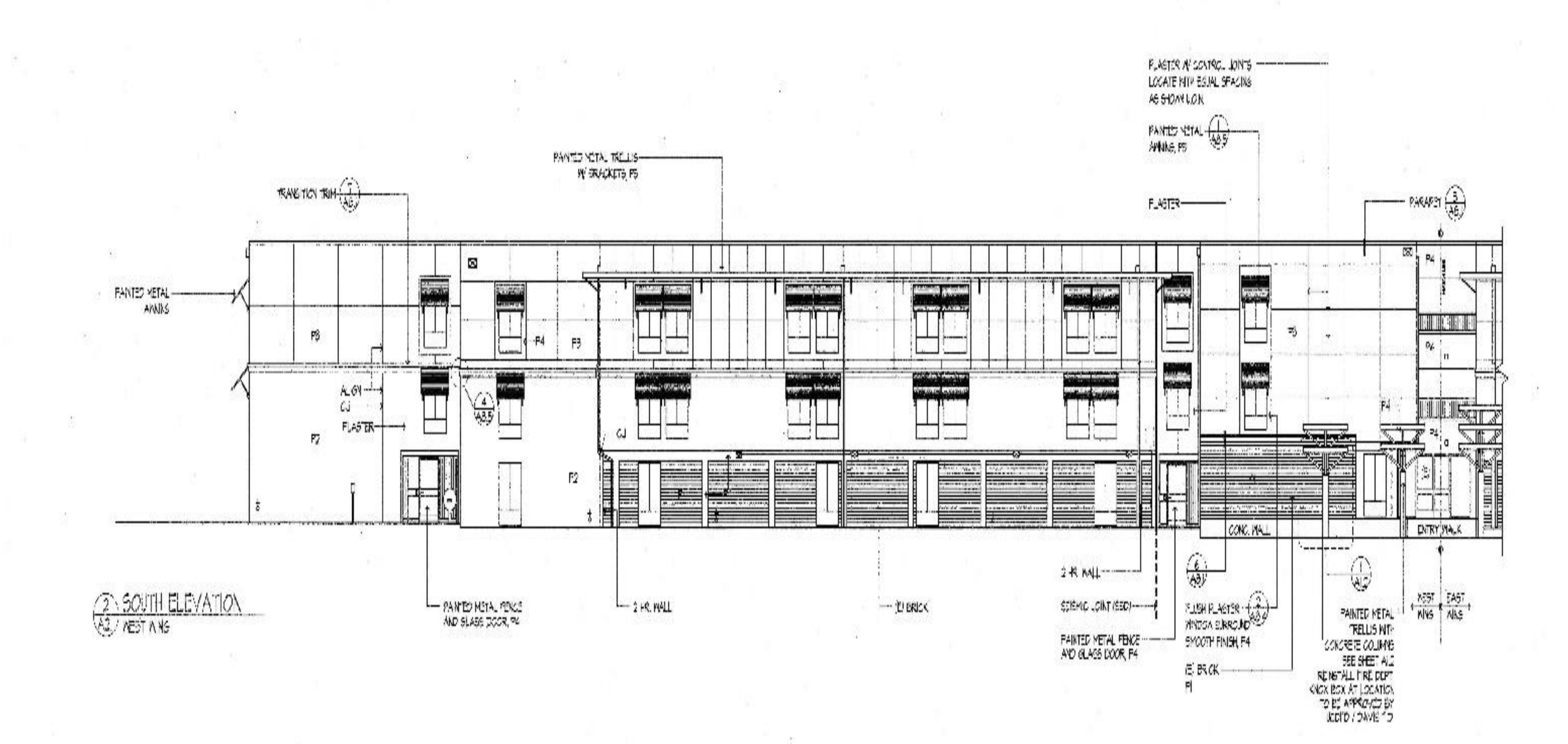

Figure 9. Detail of Page A.3.3 of Fisher Friedman Plans to Replace Mansard Detailing with Plaster and Add Metal Awnings and Trellises; Showing Same South Elevation, West Wing Detail as Figure 8; January 28, 1998 (Fisher Friedman Associates 1998)

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In 1963, Garcia established his own design firm, Buzz Garcia Associates, which specialized first in residential works (Figure 10). Later his firm would also take on commercial and professional buildings, as well as custom homes, but the bulk of his work was in apartment design. Garcia became a licensed architect in 1970; prior to 1970, he had only been a designer (Burns 1969; Sacramento Bee 1973a).

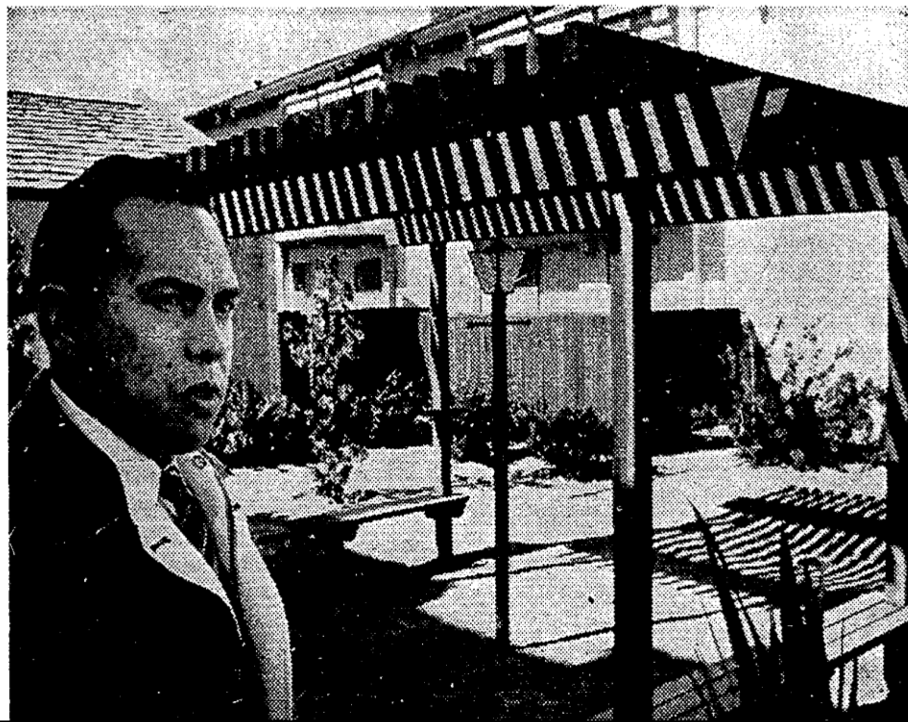

Figure 10. Buzz Garcia in Front of Apartments He Designed; Photo featured in Sacramento Bee, November 9, 1969 (Burns 1969)

Garcia, alone and with his firm, won several awards from the American Institute of Building Design in 1965, 1967, 1968, and 1970. Garcia also served as president and treasurer for multiple terms for the American Institute of Building Design. Garcia's medium was mostly apartments and commercial buildings, and he created many buildings in the mid-century modern style, often incorporating atomic modernism, Spanish revival elements, and other revival style elements as building decoration for his modern designs (Burns 1969; Sacramento Bee 1965d, 1967a).

Garcia was involved with numerous design projects in the greater Sacramento area, including the following (Sacramento Bee 1968a, 1968b, 1974, 1977):

- 2210 K Street, two-story office building, Sacramento, 1965
- Tahitian Apartments (23 apartments), 1830 Bell Street, Sacramento, 1965
- The Castilian, (17 apartments), 2617 G Street, Sacramento, 1965

- Emerson and Webster Halls (160 apartments), Oxford Circle, Davis, 1965
- Heritage House, Oxford Circle, 1965
- Cordova Music Center, Rancho Cordova, 1966
- Foothill Garden Apartments (56 apartments), 5500 Foothill Garden Court, Sacramento, 1966
- 4971 Lakecrest Drive (26 apartments), Sacramento, 1967
- The Dominican (seven townhouses) 2217 22nd Street, Sacramento, 1967
- Marconi Apartments (42 apartments), 5241 Marconi Avenue, Sacramento, 1967
- Office Building 30th and I Streets, Sacramento, 1968
- Makana Beach Condominium (40 condominiums), Oahu, Hawaii, 1968
- Providence House (45 apartments), Sacramento, 1968
- Montclair Apartments (14 apartments), 3949 K Street, Sacramento, 1968
- Pacific Securities headquarters, 1610 Executive Court, Sacramento, 1968
- Sun Garden Plaza Apartments (150 apartments), 63rd and Lemon Hill Avenues, Sacramento, 1969
- Le Marquis Apartments (38 apartments), 935 Jonfer Lane, Sacramento, 1969
- South Lake Shore Apartments (46 apartments), Sacramento, 1970
- The Oaks at El Macero (37 condominiums), Davis, 1970
- Corte Del Sol (40 apartments), Greenhaven, 1970
- River Court West Office, 2399 American River Drive, Sacramento, 1973
- Sunset Village Oaks (38 single-family homes), Rocklin, 1974
- Hurley-Ethan Office Park, 1300 Ethan Way, Sacramento, 1977
- El Camino Real Apartments (56 apartments), 5420 El Camino Avenue, Carmichael, 1978
- Jennywood (10 condominiums), 1700 Potrero Way, Sacramento, 1981

Builder/Developer: Robert C. Powell (1931–2007)

Developer Robert C. Powell was an influential Sacramento-area real estate developer from the 1960s through the 1990s. Born in 1931 in Redwood City, Powell was a high school dropout at 17 and began working immediately while taking classes at San Mateo Junior College. Powell married his high school sweetheart, Jeannette, at 18. Powell's construction career began at 21; in 1950, he became a drywall installer. Powell and his wife relocated to Sacramento in 1955. In 1958, Powell opened his first company, Robert Powell Drywall. The company closed after 2 years, but in 1961, Powell returned to the construction business for his first apartment contract: the University Square Apartments in Davis. He established his first real estate company, Robert C. Powell Developments, the same year (Davila 2007; Lawrence 1968; Sacramento Bee 1961a, 1961b).

Although by volume, more of Powell's development projects were in Sacramento, Powell left his mark on Davis, and many of his early career developments were student housing in Davis. Between 1961 and 1972, Powell built 4,000 apartment units in Davis, with most built as off-campus student housing. Powell often retained ownership of residential halls in Davis, collecting rent on these properties. Davis's explosive growth in the 1960s and 1970s can be attributed, at least in part, to Powell's apartment developments, which added thousands of residential units in one decade. Powell was known for incorporating the following features into his projects: intensive landscaping and tree plantings, on-site green spaces and water features (pools, fountains, creeks, and bridges), "luxury" marketing, architectural uniformity, grounds and buildings management in perpetuity, and a visual pull away from the surrounding landscape toward the center or core of the development (Brunzell 2015; Glover 1965; Sacramento Bee 1963, 1965c).

Powell became known in the greater Sacramento area for developing properties that mixed townhouses with garden apartments over sprawling areas in metropolitan neighborhoods. Powell's wife, Jeannette, was an artist and interior designer, and she often exerted her own artistic vision over her husband's developments, working as a team to achieve clean, intimate spaces. After experimenting with apartments in Davis and Sacramento, Powell moved from developing 100- to 200-unit apartment developments to 1,000-plus-unit developments that cost millions of dollars to finance. By 1965, Powell's investments increased and he founded Central Valley Capital Corporation, a small business investment firm in Sacramento. In 1967, Powell was named to the Young Presidents' Organization, an international group composed of company presidents younger than 40. In 1970, Powell announced he would branch out into real estate investment and established another company, IDAC Investments Inc., to manage real estate ventures. Powell continued as president of Robert C. Powell Developments, continuing to build another 697 apartments that same year. Powell proved impervious to economic downturn; amidst the 1979–1980 housing market crash, he developed his largest yet luxury home development: the Wyndgate (Burns 1970; Davila 2012; Dunne 1989; Johnson 1979, 1981; Lawrence 1968; Sacramento Bee 1965a, 1965b, 1965c; Sacramento Bee 1967b).

Neatness and neighborhood uniformity were a hallmark of Powell's communities, who used strict land use agreements and architectural controls to maintain the uniformity of the communities he developed. Powell also set up homeowner's associations and architectural control committees to oversee communities and keep his creative vision intact. Whether apartments, townhomes, condominiums, or single-family homes, Powell's developments were marketed as mid- to high-end "luxury homes," typically in clustered arrangements with integrated landscaping and planned circulation, that were controlled in perpetuity. Landscaping was intended as an isolating element in his communities, and as defining their boundaries. Landscape design, tree plantings, and water features are characteristic of many of Powell's development properties (Davila 2007; Dunne 1989; Lawrence 1968).

During the late 1980s and 1990s, Powell turned over property managing, leasing, building, and acquisition to his now substantially sized companies. Late in life, Powell and his wife Jeannette became patrons of the arts and sat on the Board of Regents for the University of the Pacific (despite neither Robert nor Jeannette having gone to college) (Figure 11). In 2007, Robert Powell died. Jeannette died in 2012. They did not have children, and left many philanthropic gifts and bequests totaling more than $130 million (Davila2007, 2012; Kasler 2013).

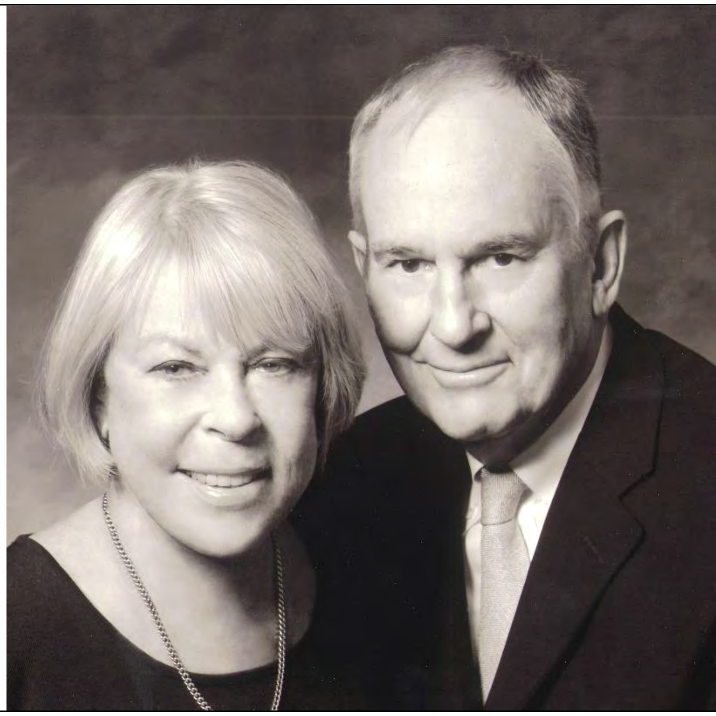

Figure 11. Jeannette and Robert C. Powell, 1989 (UP 2017)

Developments Robert C. Powell is responsible for include the following (Burns 1970; Dunne 1989; Freshwater 1965a, 1965b; Glover 1965, 1995; Johnson 1979; Lawrence 1968; Peterson 1986; Sacramento Bee 1961a, 1961b, 1963, 1964, 1965a, 1965b, 1969a, 1969b, 1970a, 1970b, 1970c, 1971a, 1971b, 1972, 1973b, 1973c, 1979):

- University Square Apartments (90 apartments), Davis, 1961
- Sacramento Towers (132 apartments), Sacramento, 1961
- Marconi Avenue Town Houses (109 townhouses), Sacramento, 1962–1964
- Anderson Place (240 apartments), Davis, 1964
- Heritage House (161 apartments), Davis, 1965
- Emerson Hall (80 apartments), Davis, 1965

- Webster Hall (80 apartments), demolished, Davis, 1965–2015
- Westwood (166 apartments), Sacramento, 1966
- Sycamore Lane (158 apartments), Davis, 1967
- Woodside Communities Apartments (1,000 apartments), Sacramento, 1967–1974
- Castilian Hall (17 apartments), demolished, Davis, 1969–2011
- Folsom Avenue Apartments (40 apartments), Sacramento, 1969
- Governor's Square (300 apartments), Sacramento, 1969–1971
- Campus Commons (1,000 townhomes), Woodside, 1971–1978
- Selby Ranch (400 apartments and townhomes), Sacramento, 1972–1973
- Cranbrook (216 apartments), Davis, 1973
- East Ranch (114 townhouses), Sacramento, 1975
- Terrence Oaks (70 townhouses), Fair Oaks, 1975
- Maddox Ranch (33 single-family homes), Carmichael, 1976
- Powell-Teichert Center, Sacramento, 1976
- Roseville Crossing Shopping Center, 1978
- Wyndgate (82 single-family homes), Sacramento, 1979–1980
- Quail Ridge (50 single-family homes), Fair Oaks, 1981
- Gold River (2,700 townhomes), Sacramento, 1982
- Pavilions Shopping Center, Sacramento, 1985
- Birdcage Walk Redevelopment, Citrus Heights, 1995
- Thousands of single-family homes, apartments, and townhomes in the greater Sacramento area

2.4 Architecture in the Project Area

Per the pedestrian survey on November 14, 2017, and the records search described above, the subject property was originally designed and built in the Neo-Mansard Style, popular in the 1960s and 1970s; however, it has since been altered beyond recognition. After the removal of key design features, the building reads as a subdued Modern Style architecture today.

Neo-Mansard (c. 1940–Present)

Neo-Mansard or Mansard style is one of a number of Neo-Eclectic architectural styles popular in America during the second half of the 20th century. Neo-Eclectic architecture refers to designs that borrow architectural elements from, but does not copy, traditional and revival styles and details. The Neo-Mansard style first appeared in the 1940s, reached the height of its popularity in the 1970s, and is still used today, most often in commercial buildings. The style is expressed as an adaptation of the 19th century French Second Empire feature the Mansard roof, and uses the steeply sloped roof plane typical of a Mansard roof with sloping wall cladding on the top-story of a two-or-more-story building, often with windows and doors recessed into the sloped shingle cladding. Further recalling the Second Empire tradition, the material of the Neo-Mansard's upper wall cladding is typically cedar or asbestos shingle, but may also be clad in standing seam metal, clay tile, or three-tab asphalt shingles, recalling only the Mansard form instead of material. The actual roof of a Neo-Mansard can be traditional Mansard-style, hipped, or flat. If flat, there is usually a parapet wall to disguise mechanical equipment on the roof, which is flat and unadorned. The first floor can be clad in a variety of materials, including brick veneer, clapboard, stone, T-1-11, and plaster with equally spaced control joints. Windows and doors vary in style, as modern architecture does, but notably, doors and windows may extend into the Mansard roof from the first story. Second-story windows (or windows on the story with the Mansard-like roof/wall cladding) may be either recessed or dormered. The upper story may also have porches recessed into the sloped roofline. First-story windows are flush with the wall plane and typically aluminum. Doors and entryways are typically recessed. Although Neo-Mansard single-family homes exist, Neo-Mansard often takes the form of multi-family housing, commercial buildings, and townhouses (Alaska DNR 2015; Caltrans 2011; Docomomo WEWA 2017; Harris 2003; McAlester 2015; PHMC 2015).

The Neo-Mansard style was conceived in the 1940s. The incorporation of formal design elements and details rejected the stripped-down, informal Ranch-style and Contemporary-style architecture that typified the post-war period. The style could also get around deed restrictions and zoning ordinances of then-popular suburban subdivisions, many of which required one-story structures or low roof heights. The Mansard style could follow these regulations while still providing a two-story home. Like Ranch- and Contemporary-style homes, the Neo-Mansard style was relatively inexpensive to build, requiring only a single story of brick or stone-veneer cladding, while covering the upper floor in roofing material. The style was not limited to single-family residential buildings, and was embraced by commercial buildings and apartment buildings. The McDonald's fast-food chain has popularized the Neo-Mansard and Double-Mansard roof style at its iconic restaurants since the late 1960s. The Neo-Mansard and other Neo-Eclectic styles that borrow traditional details and apply them to prefabricated structures are pre-cursors to the McMansion style of the 1990s and early 21st century (Alaska DNR 2015; McAlester 2015; Tiesdale and Carmosa 2007).

Key characteristics of the Neo-Mansard or Mansard style of architecture are the following (Alaska DNR 2015; Docomomo WEWA 2017; McAlester 2015; PHMC 2015):

- Mansard roof with slope extending one level to cover the top-most floor of the building, or a flat roof with faux-Mansard detail used as wall cladding for upper-most floor

- Upper-story dormer windows on steep lower slope or windows recessed into the plane of the sloped roof
- Two stories
- Parapets used to disguise mechanical equipment
- Recessed entries
- Primary roofing/upper-story cladding material is wood shingles
- Lower story typically clad in wood, T-1-11, stone veneer, or brick veneer

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3 BACKGROUND RESEARCH

3.1 CHRIS Records Search

Dudek requested a CHRIS records search from the Northwest Information Center, which houses cultural resources records for Yolo County. Dudek received the results on November 15, 2017. The search included any previously recorded cultural resources and investigations within a 0.5-radius of the project site. The CHRIS search also included a review of the NRHP, CRHR, California Inventory of Historic Resources, historical maps, local inventories, and General Land Office and/or Rancho Plat Maps. A letter from the Northwest Information Center summarizing the results of the records search and a bibliography of prior cultural resources studies is provided in Appendix B, Confidential Records Search Results, of this report.

3.1.1 Previous Technical Studies

Twenty-one previously conducted studies were identified within the 0.5-mile records search radius. Of these studies, none overlap the project site (see Table 1 and confidential Appendix B).

Table 1. Previously Conducted Cultural Resources Studies Within 0.5 Miles of Project Site

Report No.	Authors	Year	Month	Title	Publisher	In Area of Potential Effects?
S-005056	Jerald Jay Johnson	1976	Sep	An Archeological Reconnaissance of 11 Proposed Drilling Locations on the University of California, Davis Campus, Yolo and Solano Counties, California	California State University, Sacramento	No
S-016450		1993	Apr	Archaeological Inventory Survey, Evergreen General Plan Amendment/Prezoning/Annexation, 120.2 acres Adjacent to the North Side of the City of Davis, Yolo County	Jensen & Associates	No
S-017881	William Shapiro	1996	Jan	Archaeological Investigation for the Proposed Parking Lot 35 at the Intersection of Orchard Park Drive and La Rue Road on the U.C. Davis Campus, Yolo County, California	Pacific Legacy Inc.	No
S-018005	William A. Shapiro and Lisa A. Shapiro	1996	Feb	Archaeological Investigations for the Residential Housing Network Project (RESNET) on the U.C. Davis Campus, Yolo County, California	Pacific Legacy Incorporated	No

Table 1. Previously Conducted Cultural Resources Studies Within 0.5 Miles of Project Site

Report No.	Authors	Year	Month	Title	Publisher	In Area of Potential Effects?
S-020194	John A. Nadolski	1998	Mar	Archaeological Investigation for the LaRue Student Housing Project	Pacific Legacy Incorporated	No
S-020308	Eleanor H. Derr	1998	Mar	Pacific Bell Mobile Services: 756 Oeste & West Eighth Streets, Davis, Yolo County; Site # SA-147-04 (letter report)	Cultural Resources Unlimited	No
S-022349	Melinda A. Peak	1999	Jul	Sprint PCS Site No. FS19XC001A, U.C. Davis (letter report)	Peak & Associates	No
S-022549	John A. Nadolski	1998	Nov	Archaeological Investigation for the Chilled Water Phase IV Project on the U.C. Davis Campus	Pacific Legacy Inc.	No
S-023736	John Nadolski	2000	May	Archaeological Investigation for the UCDNet2 Project on the UC Davis Campus	Pacific Legacy Inc.	No
S-023737	John A. Nadolski	2000	Jul	Archaeological Investigation for the FACE ARC Project on the UC Davis Campus	Pacific Legacy Inc.	No
S-025318	John A. Nadolski	2001	Aug	Archaeological Investigations for the Segundo In-Fill Housing Project on the UC Davis Campus	Pacific Legacy Inc.	No
S-028237	John A. Nadolski	2003	Apr	Archaeological Investigations for the West Entry Parking Structure on the UC Davis Campus (856-13)	Pacific Legacy Inc.	No
S-028242	John A. Nadolski	2002	Jun	Archaeological Investigations for the Campus Child Care Center on the UC Davis Campus (856-12)	Pacific Legacy Inc.	No
S-039686	Jessica Tudor and Kathleen A. Crawford	2012	Aug	Cultural Resources Records Search and Site Visit Results for T-Mobile West LLC Candidate SCO6147A (RT 113 & Russell Blvd.), 530 West Eighth Street, Davis, Yolo County, California (letter report)	Michael Brandman Associates	No
S-039686a	William H. Bonner and Kathleen A. Crawford	2012	Aug	Direct APE Historic Architectural Assessment for T-Mobile West, LLC Candidate SC06147A (RT 113 & Russell Blvd), 530 West Eighth Street, Davis, Yolo County, California (letter report)	Michael Brandman Associates	No

Table 1. Previously Conducted Cultural Resources Studies Within 0.5 Miles of Project Site

Report No.	Authors	Year	Month	Title	Publisher	In Area of Potential Effects?
S-040643	Carrie D. Wills and Kathleen A. Crawford	2012	Dec	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC, Candidate SCO6783A (Russell/Davis), 885 Russell Boulevard, Davis, Yolo County, California (letter report)	Michael Brandman Associates	No
S-040643a	Wayne H. Bonner and Kathleen A. Crawford	2013	Jan	Direct APE Historic Architectural Assessment for T-Mobile West, LLC Candidate SC06783A (Russell/Davis), 885 Russell Boulevard, Davis, Yolo County, California (letter report)	Michael Brandman Associates	No
S-046673	Katherine Anderson and R. Scott Baxter	2014	Nov	City of Davis Water Quality Improvements Project, Phase I Cultural Resources Study	ESA	No
S-047388	Carrie D. Wills and Kathleen A. Crawford	2015	Mar	Collocation (CO) Submission Packet FCC Form 621, SC06783A (Russell/Davis), 885 Russell Boulevard, Davis, CA 95616	Environmental Assessment Specialists Inc.	No
S-047388a	Dana DePietro, Carrie D. Wills, and Kathleen A. Crawford	2015	Feb	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SC06783A (Russell/Davis), 885 Russell Boulevard, Davis, Yolo County, California (letter report)	Environmental Assessment Specialists Inc.	No
S-047388b	Carol Roland-Nawi	2015	Apr	FCC_2015_0312_002; SC06783A (Russell/Davis) 885 Russell Boulevard, Davis, Collocation	Office of Historic Preservation	No

Report No. S-18005

An archaeological investigation was completed relating to proposed UC Davis campus housing by Pacific Legacy in 1996. This investigation included pedestrian survey and extended Phase I auguring at four locations throughout the UC Davis area. Of pertinence for the present study, 13 augurs were placed within the Orchard Park apartment complex (located 450 feet south of Emerson Hall) and three augurs were placed in the Castillian/Cuarto area (located 800 feet west of Emerson Hall). All augurs were bored to 6 feet below the ground surface, none of which yielded subsurface cultural material. Subsurface investigations encountered clayey silt 1 to 3 feet below the surface, underlain by homogeneous light brown silty sand.

Based on the absence of identified subsurface cultural material, no additional work (including archaeological monitoring) was recommended to be necessary for earth-disturbing activities planned for the Orchard Park or Castillian/Cuarto project areas (Pacific Legacy 1996).

3.1.2 Previously Recorded Cultural Resources

Researchers at the Northwest Information Center did not identify any previously recorded cultural resources within the project site. However, five resources have been recorded within a 0.5-mile radius of the project site (see Table 2 and confidential Appendix B). Summaries of the most pertinent resources for the present study are provided below.

UC Davis staff actively corresponds with representatives of NAHC-listed tribes that are considered to be traditionally culturally affiliated with the Davis area. If requested, UC Davis will complete a NAHC Sacred Lands File search and consultation with Native American representatives.

Table 2. Previously Recorded Cultural Resources Within 0.5 Miles of the Project Site

Primary	Trinomial	Resource Name	Type	Age	Recording Events	In Project Area of Potential Effects?
P-57-000109	CA-YOL-000134	None	Site	Prehistoric	1972 (Len Williams) 1994 (William Shapiro, BioSystems) 1994 (Will Shapiro, Lisa Shapiro, Sarah Moran, BioSystems Analysis)	No
P-57-000382		Lincoln Highway	Structure, District	Historic	1996 (B.Maley, Architectural Resources Group) 2011	No
P-57-000385		Avenue of the Trees	Site	Historic	1996 (B.Maley, ARS)	No
P-57-000698		Route 113 and Russell Blvd.	Structure	Historic	2012 (Kathleen Crawford, Michael Brandman Associates)	No
P-57-000699		T-Mobile West LLC SC06783A/Russell/Davis	Building	Historic	2012 (Kathleen Crawford, Michael Brandman Associates)	No

P-57-000109

This prehistoric archaeological site, mapped approximately 2,000 feet from Emerson Hall, was initially recorded in 1972 by Len Williams. The site was reported to have very few surface artifacts, but to include a

Late Prehistoric subsurface archaeological deposit and potential human burials. Additional surface and subsurface investigations were completed in 1994 by Biosystems for proposed UC Davis improvements. The lack of a surface manifestation associated with this site was confirmed, but two imported obsidian artifacts were identified. Auger borings did confirm the presence of subsurface archaeological resources within the recorded site boundary, and suggested that subsurface deposits may extend beyond this area.

P-57-000382

The historic Lincoln Highway District has been recorded 250 feet to the south of the project's area of potential effects. The Lincoln Highway was opened in 1915 and, following construction of the Yolo Causeway in 1916 and construction of the Richards Boulevard Underpass in 1917, allowed for state highway traffic to travel though the town of Davis. This route is no longer used as a primary route of transcontinental travel, but it was central to the region's growth and development.

P-57-000699

This historic property, consisting of a Modern-style shopping center that was constructed in 1966 has been recorded at 737-885 Russell Blvd., is approximately 700 feet to the east of the present project site. The property was evaluated to be not eligible for NRHP, CRHR, or local Davis Register listing.

3.2 Building Development Research

University of California Davis Special Collections

Dudek contacted Sara Gunasekara, archivist for UC Davis Special Collections, on November 16, 2017. Ms. Gunasekara invited Dudek to come view materials in person at the UC Davis archives, but declined to provide information about Emerson Hall specifically. Ms. Gunasekara stated that information about the building might be available in the following collections: Strategic Communications Records (AR-031), Vice Chancellor and CFO records (AR-051), and UC Davis Publications (LD781.D3 A56748 1970z). These collection items were not investigated.

University of California Davis Facilities Management Department

Dudek contacted the UC Davis Facilities Management Department on November 16, 2017. Jeff Price, GIS supervisor with Facilities Management, responded on November 28, 2017. Mr. Price gave Dudek remote access to the online architectural drawings archives, which included a robust history of building alterations and original design drawings. All information obtained from the UC Davis Facilities Management Department and through Mr. Price was used in preparation of the historic context and building development sections of this report (Sections 2 and 4).

City of Davis

Dudek accessed City photographs, map resources, online books, and historical contexts from the City of Davis website on November 16, 2017. Information obtained from the City of Davis was used in preparation of the historic context described in Section 2, above.

Yolo County Assessor's Office

Dudek accessed the Assessor's Parcel Number database using the Yolo County Assessor's online search platform on November 20, 2017. An Assessor's Parcel Number was determined for the subject property's address, but no other data was available.

Yolo County Recorder

Dudek accessed Deed and Deed Transfer records held by the Yolo County Assessor using its online search platform on November 20, 2017. Online deed records only reach back to 1970, and there was no 1986 record indicating the sale or transfer of Emerson Hall from Robert C. Hall to UC Davis.

Sacramento Public Library

Dudek accessed Sacramento Public Library's online archive of newspaper articles from the *Sacramento Bee* on November 27, 2017. Information obtained from the Sacramento Public Library was used in the preparation of the historic context described in Section 2.

Center for Sacramento History

Dudek accessed the Center for Sacramento History's database of photographs using its online search platform on November 28, 2017. Several photographs of Buzz Garcia building projects and Robert Powell projects were used in the preparation of the historic context described in Section 2.

Davis Historical Society

Dudek contacted John Lofland of the Davis Historical Society and received a response on December 1, 2017. Mr. Lofhand stated that the Davis Historical Society did not have materials relating to the subject property or related individuals. Mr. Lofland referred Dudek to the Hattie Weber Museum.

Hattie Weber Museum

Dudek contacted the Hattie Weber Museum on December 1, 2017, and again on December 5, 2017. As of the date of this report, the museum had not replied to requests for materials.

Aerial Photograph and Historic Map Review

A review of historic maps and aerial photographs was conducted as part of the archival research effort for the project. All Sanborn maps for the City of Davis were reviewed, and the project area was not included on any of the maps. Historic aerial photographs were reviewed for the project site from the following years: 1968, 1993, 2008, 2003, 2005, 2009, 2010, and 2012. In 1968, Emerson Hall and neighboring buildings Heritage House and Webster Halls were already in place. In 1968, Emerson Hall is bordered to the east and north by other apartment complexes, to the west by Oxford Circle Park, and to the south by a large agricultural field. With the exception of the agricultural field, which was developed into the Russell Park Apartments by the 1993 aerial photograph, the area has been unchanged since 1968 (NETR 2017).

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4 FIELD SURVEY

Dudek cultural resources specialist Nicholas Hanten, BA, conducted a pedestrian survey of the project area on November 14, 2017. During the survey, Mr. Hanten walked all accessible portions of Emerson Hall and documented the building with detailed notes and photographs, specifically noting character-defining features, important spatial relationships, and any observable alterations to the building.

Dudek documented the subject property using field notes, digital photography, and close-scale field maps. Photographs of the project area were taken with an iPad Air 5megapixels camera. All field notes, photographs, and records related to the current study are on file at Dudek's Pasadena, California, office.

4.1 Description of Surveyed Resources

The project site contains one property constructed more than 45 years ago (Figure 12).

Emerson Hall: 565 Oxford Circle, Davis, Assessor's Parcel Number 034-252-030

Emerson Hall is a dormitory built in 1965, and is part of the Cuarto dormitory neighborhood northwest of the UC Davis core campus. The three-story dormitory building is in a hollow, trapezoid-shaped plan with two courtyards, and features a flat roof with high parapets. Exterior walls are clad in two-toned plaster with equally spaced control joints and brick veneer. The floors are separated by a metal, horizontal band painted light beige, much like a stringcourse in traditional masonry buildings. Windows throughout the building consist of paired, tall, metal-framed two-lite windows with metal panels beneath the bottom light on the second and third floors, and a single tall metal-framed two-lite window with metal panels beneath the bottom light on the first floor.

On the main (south) elevation, the wall surface is irregular along the entire elevation, stepping forward (south) and backward (north) into the wall plane (Figure 13). The main entrance on this elevation faces south onto Oxford Circle and is marked by metal lettering attached to the wall surface reading "565 / Emerson Hall." Windows are arranged such that the windows of all three floors are in line. Windows are tall, metal-framed, two-lite, arranged horizontally with a metal panel below the two lites. The windows of the second and third floors have a metal awning shade permanently fixed to the wall surface. After the first two stepped segments along the main elevation, the first floor recesses back roughly 10 feet, and the upper floors create an overhang that is supported by evenly spaced metal posts. The wall surface in the recessed area is clad in red-painted brick veneer. The right of this is the hallway leading to the main entrance, which features a light-beige wall surface on all three floors and a metal, automatic sliding door with a card reader. On the second and third levels above the main entry door there are two balconies recessed into the wall with metal railings. To the right of the main entry hallway, the window pattern, wall color pattern, irregularly stepped wall plane, and recessed first floor wall with brick veneer continue to the southeast corner. There are two secondary entrances along the south elevation. The secondary entrance on the west side of the south elevation is slightly recessed on the first floor and is a white, metal and glass door with a white surround. The secondary entrance on the east side of the building features the same light-beige wall surface on all three floors, metal sliding doors with card readers, and balconies on the second and third floors. This entrance faces south toward the Cuarto Dining Commons building, across a small, paved courtyard. The area south of Emerson Hall is landscaped with shrubs, trees, and decorative grasses (Figure 14).

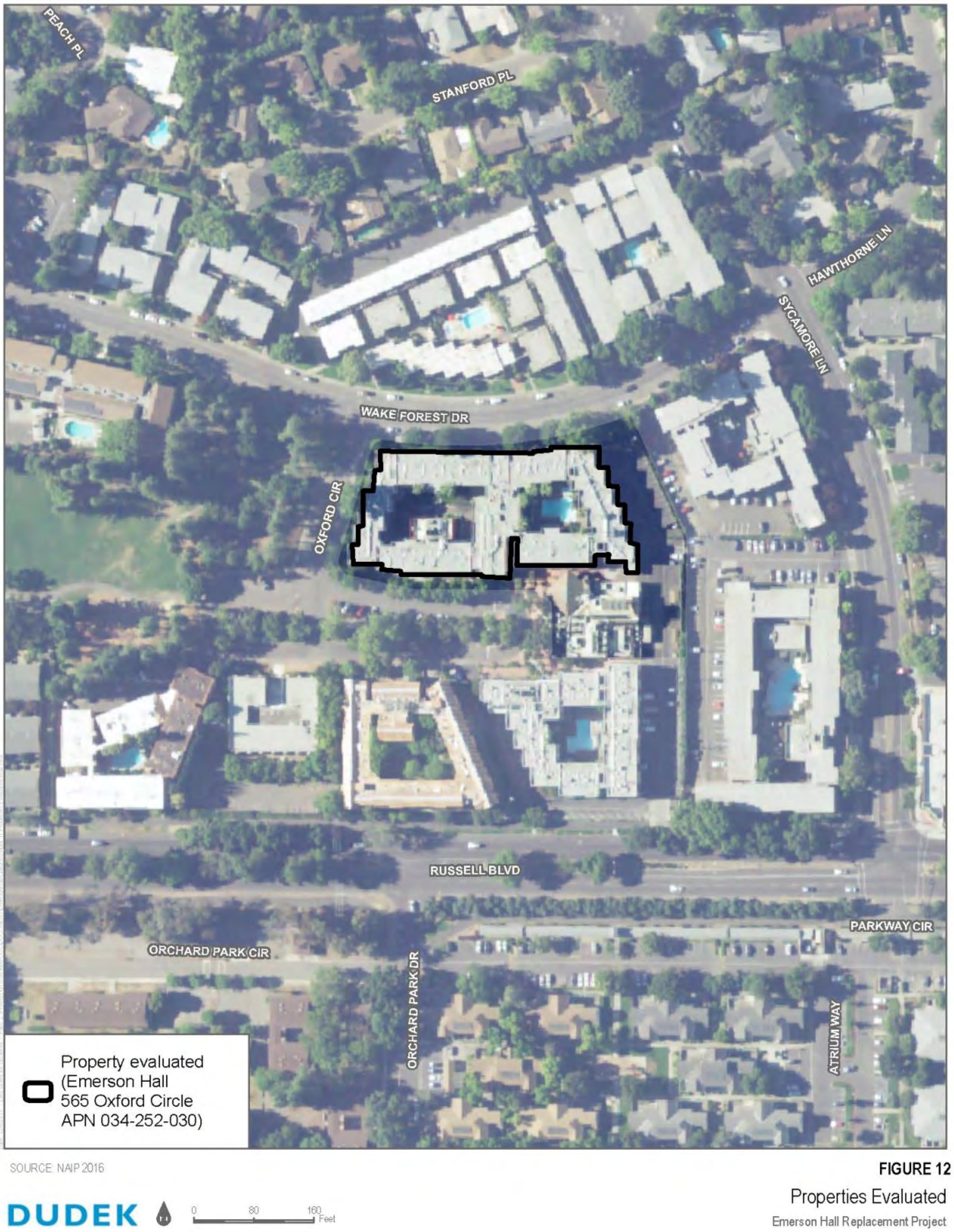

Figure 12. Properties Evaluated

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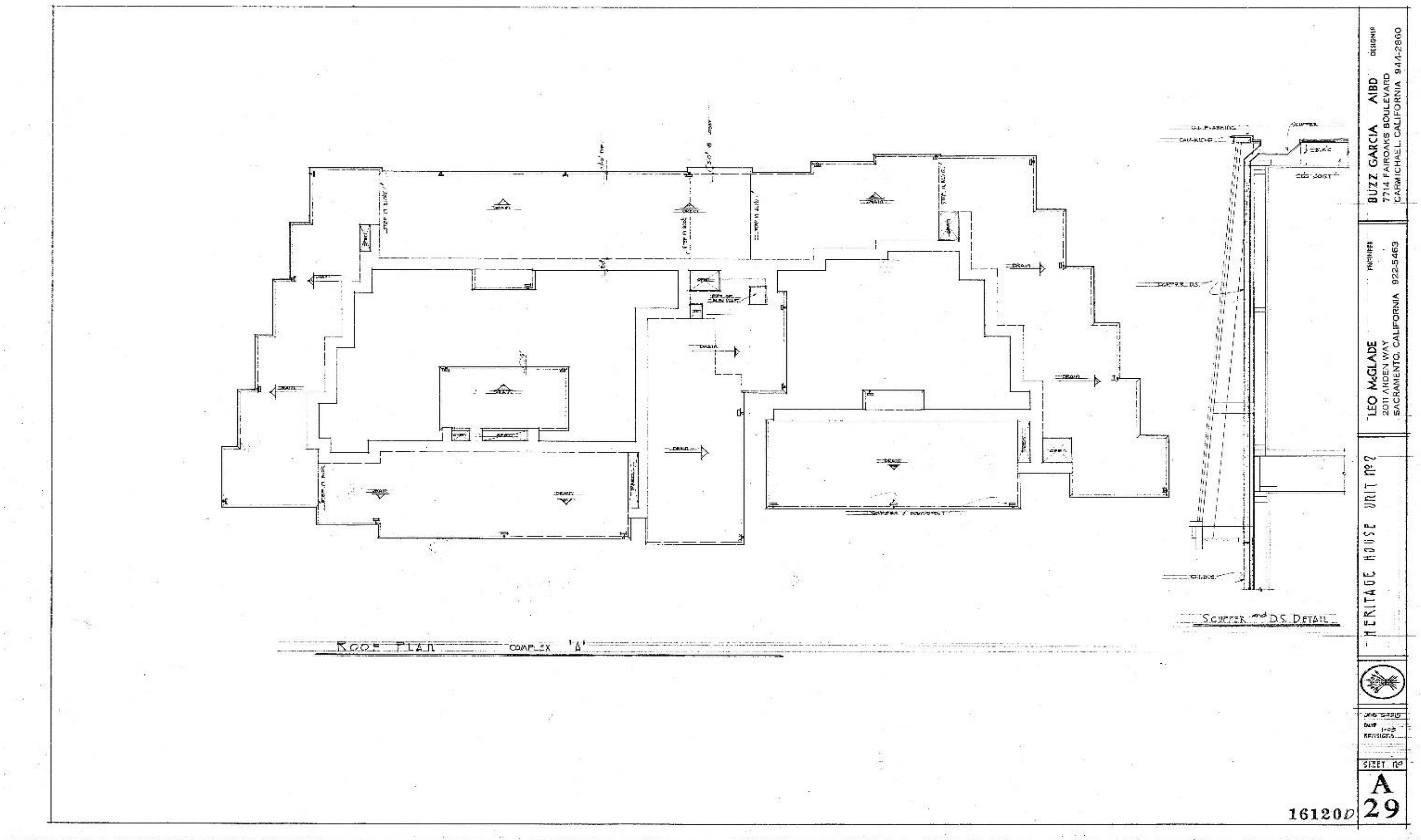

Figure 13. Original Roof Plan Exhibiting **the "Stepped"** South and North Elevations **and the "Sawtooth"** East and West Elevations Around Two Interior Courts (Garcia 1964)

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Figure 14. Main Elevation, View to Northeast, November 14, 2017 (IMG_0847)

The east elevation features a regularly stepped, sawtooth-style wall plane. It faces east toward a parking area. Each stepped portion features one two-lite window on the first floor, a pair of metal two-lite windows on the second floor, and another pair of metal two-lite windows within a light-beige plaster panel on the third floor. The first floor is recessed roughly 10 feet, and the wall features red-painted brick veneer. The second floor is light-beige plaster cladding without seams, separated from the third floor by a metal horizontal band. The third floor features dark-beige painted plaster cladding with equally spaced control joints (with the windows trimmed in light-beige plaster panels). There are no entrances along this elevation.

The north elevation features an irregular stepped façade, similar to the main elevation, facing Wake Forest Drive. The north elevation first and second levels consist of seamless light-beige plaster cladding, with the exception of the first floor recessed sections that are clad in a painted brick veneer. The third floor is dark-beige plaster cladding with equally spaced control joints and windows outlined in light-beige panels. This elevation features a single entryway near the northeast corner. The north elevation entryway is recessed under the second and third floors and features a glass plate wall with a single glass-and-metal door. Windows along this elevation are identical in format to the other elevations. The area north of the north elevation is landscaped with shrubs, trees, and decorative grass.

The west elevation features a regularly stepped, sawtooth-style wall plane, mirroring the east elevation. It faces west toward the north/south segment of Oxford Circle that leads to the circle itself. Each stepped portion features one two-lite window on the first floor, a pair of metal two-lite windows on the second floor, and another pair of metal two-lite windows within a light-beige plaster cladding with equally spaced control joints on the third floor. Unlike the east elevation, the first floor does not feature any recessed sections, and there is no painted brick veneer on this elevation. Windows are identical in format to the other elevations. The area west of the west elevation is landscaped with a lawn, trees, and shrubs (Figure 15).

Figure 15. North and West Elevations, Displaying **Sawtooth "Stepping" on** West Elevation (Right), View to Southeast; November 14, 2017 (IMG_0801)

Identified Alterations

In 1986, UC Davis acquired Emerson Hall through third-party company Helper Real Estate Investments of Moraga and renovated it. According to Facilities Management Department records, renovations were numerous and extensive. Minor renovations included the following (Fisher Friedman Associates 1998; Glover 1965, 1986; Garcia 1964; UC Davis Physical Plant 1987, 1989, 1990, 1992a, 1992b, 1992c, 1992d, 1992e, 1993, 1994a, 1994b, 1998, 2001, 2006):

- Repainting (1987, 1992, 1993, 1998, 1999)
- Window replacement (in-kind materials) (1994, 2006)
- Increasing accessibility (1990, 1992, 2001)

- Shower and tub replacement (1987, 1991, 2001)

Several renovation projects are of note because of the loss of original materials or changes to physical appearance, as follows:

- HVAC addition (1989)
- Asbestos abatement (1992)
- Removal and replacement of main (south) entrance (1992)
- Seismic renovations, Mansard roof shingle removal and replacement, addition of metal awnings and details, renovation and material replacement of interior courtyard, removal of original decking and landscaping in interior courtyard (1998)

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5 SIGNIFICANCE EVALUATIONS

5.1 Emerson Hall, 565 Oxford Circle, Davis, California

NRHP/CRHR Statement of Significance

In consideration of the project site's history and requisite integrity (see "Integrity Discussion," below), Dudek finds Emerson Hall not eligible for listing in the NRHP or CRHR based on the following significance evaluation and in consideration of national and state eligibility criteria.

Criterion A/1: Associated with events that have made a significant contribution to the broad patterns of our history.

The building type and construction of Emerson Hall in 1965 places it within a period of "Explosive Growth (1959–1971)," like numerous other multi-family residential buildings throughout the City of Davis and on the UC Davis campus, per Brunzell (2015). This period is described as having City-approved residential and commercial growth, which correlated to the increase in student population, permanent teaching staff, and administrative staff after UC Davis became a general campus in 1959. Fifty-six new subdivisions were recorded in Davis from 1960 through 1969, adding thousands of homes to growing Davis. In the same period, the City of Davis did not make large annexations to increase the size of the City. The result was that, within City boundaries, residential housing intensified and multi-family residences such as apartments and cluster-planned subdivisions accounted for a great deal of the residential growth. Apartments emerged as an important building type during the period of explosive growth. Robert C. Powell, the Emerson Hall developer, is specifically mentioned for constructing 4,000 apartment units between 1961 and 1972. Apartments were no longer limited to residential infill, but now took up entire City blocks, changing the landscape of the City (Brunzell 2015; Fitch 1998; Lofland 2004).

Brunzell historical's context states that significant residential properties in the "Explosive Growth" period (1959–1971) must conform to the following criteria (Brunzell 2015, 48):

> Association with events that have made a significant contribution to the broad patterns of Davis history. Residential properties from this period may be specifically associated with the growth of the University after its transition to a general campus in 1959 and the subsequent rapid residential expansion of the City of Davis. They may also be associated with the development of bike lanes and green belts, important aspects of Davis history during this period.

Although Emerson Hall's construction took place during this important period of growth and development, this building form was one of many constructed by Robert C. Powell, so it is not unique to the period of growth and development. In addition, the heavily altered nature of the building compromises its association, as it is no longer representative of the construction methodology and aesthetic used during this period of explosive growth. Furthermore, the site has no notable association with green belts or bike lanes. Despite its construction during this broad pattern of development in the City of Davis, the subject property does not appear eligible under NRHP/CRHR Criteria A/1 (Ames and McClelland 2002; NPS 1990).

Criterion B/2: Associated with the lives of persons significant in our past.

All owner names identified with Emerson Hall were researched for possible significance. Developer Robert C. Powell financed the construction of, owned, operated, and managed Emerson Hall from 1965 through 1986, when UC Davis acquired ownership of the property. Robert C. Powell's association with this building is not unique to the subject property, since he was involved in the construction of hundreds of buildings in the City of Davis (Boland n.d.).

Furthermore, Powell's developments tend to share common community characteristics: incorporation of private green space or private water features for apartment residents, property care and maintenance offered in perpetuity, "luxury" marketing, intensive landscaping, and a visual pull away from the surrounding streetscape toward the center or core of the development. Emerson Hall does not embody these essential design characteristics to the extent that other Powell developments do, and many of these characteristics were lost when UC Davis acquired and renovated the property. Lastly, Powell went on to increase the scale of his developments over time; his early projects consisted of a few dozen or a few hundred apartment units, but his later projects numbered in the thousands of units while retaining the community characteristics listed previously. Emerson Hall falls squarely in the middle range and is unremarkable for both its scale or development period within the chronology of Powell's career. The subject property is not unique or innovative among these developments, and there are many other Davis area developments by Powell of the same or similar scale. For these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria B/2 (Boland n.d.; NPS 1990).

Criterion C/3: Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

Emerson Hall is a dormitory that Louis "Buzz" Garcia designed in the Neo-Mansard style in 1964. Garcia was a local architect and designer who worked within the Davis and greater-Sacramento areas where he built mainly apartments. Neo-Mansard and other eclectic styles provided needed variety among the popular Ranch and Contemporary styles that did not have much decoration or visual variety. The subject property was built in 1965, prior to the beginning of the Neo-Mansard popular period (1970s), and was noted in the *Sacramento Bee* for Garcia's use of the shingle false-Mansard to reduce the apparent height of the three-story dormitory. Garcia, however prolific and popular around the greater Sacramento area, does not constitute a master architect. His designs for Emerson, Webster, and Heritage House were celebrated in a 1965 *Sacramento Bee* article for the "compelling design" of his roof treatment, but the execution is unremarkable in Davis. Other Neo-Mansard apartments persist in lots adjacent to Emerson Hall, such as the University Court Apartments at 515 Sycamore Lane, La Casa de Flores at 517 Oxford Circle, and the Sigma Nu Fraternity at 525 Oxford Circle (Freshwater 1965a, 1965b; Garcia 1964).

Although the subject property retains some elements of the Neo-Mansard style (i.e., recessed entries and windows, use of parapets to hide mechanical structures on the roof, first floor cladding in brick veneer), due to significant alterations in the late 1990s, important character-defining features were lost, including the Neo-Mansard faux roof and shingle siding. Finally, the subject property does not appear eligible as a contributor to a historic district. For all of these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria C/3.

Criterion D/4: Have yielded, or may be likely to yield, information important in prehistory or history.

There is no evidence to suggest that this property has the potential to yield information important to state or local history, nor is it associated with a known archaeological resource. Therefore, the property is recommended not eligible under NRHP/CRHR Criterion D/4.

California Historical Landmark Statement of Significance

In consideration of the subject property's history and requisite integrity, Dudek finds the property not eligible for designation as a CHL based on the following significance evaluation and in consideration of CHL eligibility criteria.

The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).

The subject property is an altered example of the Neo-Mansard-style dormitory or apartment building constructed in 1965. Although the Neo-Mansard style is not as common as Contemporary- or Ranch-style homes from the same period, there are several contemporaneous examples throughout Davis. It is not the first or last Neo-Mansard-style apartment or dormitory constructed in Davis, and does not retain enough physical integrity to be considered a significant example of its type. The building is the work of local builder/developer Robert C. Powell, and one of several of his buildings built during a time of prolific and explosive growth in Davis. The subject property is the work of architect Louis "Buzz" Garcia, but Garcia is not noted as a state or locally significant architect. Emerson Hall further does not represent any innovative construction techniques. The building was designed in 1964, several years before the height of the style's popularity, and Neo-Mansard-style apartments persist through the present day in Davis. Due to its significant alterations, Emerson Hall is no longer a significant example of the style within this group. Therefore, the subject property is recommended not eligible for listing as a CHL under this criterion.

Associated with an individual or group having a profound influence on the history of California.

Emerson Hall is associated with Robert C. Powell, an individual whose early apartment designs and planning would influence the development of the unified subdivision residential developments so prolific and popular in California. Emerson Hall, however, is not an early example of subdivision housing, and many of Powell's planning features were altered after UC Davis acquired the property in 1986. Therefore, the subject property is recommended not eligible for listing as a CHL under this criterion.

A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

The building represents a Neo-Mansard-style dormitory, which reached the height of its popularity in the 1970s throughout the United States due to a backlash against decoration-less styles such as Ranch and Contemporary. The subject property is not a prototype or outstanding example of its style. Although it predates Neo-Mansard's period of popularity in the 1970s, the style was pioneered in the 1940s. Significant alterations in the late 1990s further compromised important character-defining features of the style, further affecting its representation of the Neo-Mansard style. Furthermore, the building is not known to be the work of an important architect. Therefore, the subject property is recommended not eligible for listing as a CHL under this criterion.

City of Davis Criteria

The City of Davis Landmark designation criteria closely follow those of the NRHP and CRHR with regard to consideration of important events, people, and architectural merit. Therefore, the subject property is recommended not eligible for the reasons stated above under City of Davis Code 40.23.060(a)(1): association with events that have made a significant contribution to the broad patterns in the history of Davis. Additionally, Emerson Hall not does not merit designation as a City of Davis Merit Resource, since it does not meet the City of Davis Code (40.23.060(c)) integrity requirements. Emerson Hall is not within a City of Davis or nationally nominated historic district. Based on the NRHP/CRHR/CHL criteria discussion above, and the requirements of City of Davis Code 40.23.060, the subject property is recommended not eligible for listing under all City of Davis designation criteria.

Integrity Discussion

Integrity is the authenticity of a historical resource's physical identity, as evidenced by the survival of characteristics that existed during the resource's period of significance and the historical resource's ability to convey that significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity. Similar stipulations apply to listing at the state level, but the threshold is lower for the CRHR, particularly if the site has potential to yield significant scientific or historic information. The evaluation of integrity is sometimes a subjective judgment, but it must always be grounded in an understanding of a property's physical features and how they relate to its significance. In consideration of the NRHP, either historic properties retain integrity or they do not. Seven aspects or qualities, in various combinations, define integrity: location, design, setting, materials, workmanship, feeling, and association (NPS 1990). To retain historic integrity, a property generally possesses several, if not most, of the aspects. The retention of specific aspects of integrity is paramount for a property to convey its significance.

The subject property's integrity is as follows:

Location: The building is sited on the original location of construction in its original orientation. Therefore, the subject property retains integrity of location.

Design: The building was subjected to several alterations over time that have significantly compromised its integrity of design, including the complete removal of the faux Mansard roof, changes to window treatments, changes to cladding materials, the addition of window awnings, reconfiguration of the trellis, reconfiguration of the main (south) entry, and significant alterations to the interior of the building. Today, the building reads as a 21st century Modernist Découpage-style building, with varying wall textures and cladding materials. Therefore, the building does not maintain integrity of design.

Setting: Although the subject property maintains its original property boundaries, the surrounding areas have changed significantly over time. The property's integrity of setting was compromised by the demolition of the original Webster Hall and Heritage House, which were developed in conjunction with Emerson Hall. Additionally, Oxford Circle and the surrounding neighborhood have seen some development since Emerson Hall was built in 1965. Since the 1968 historic aerial, the first aerial showing Emerson Hall and the one with the closest date to the building of Emerson Hall, the area south of Russell Boulevard has seen significant development, changing from agricultural field to clustered apartment complex. Oxford Circle Park and most other buildings on Oxford Circle retain their original configurations and locations, but the alterations to the Cuarto Dining Commons and the demolition of Webster Hall leave the setting of the Oxford Circle neighborhood altered. Therefore, the building does not retain integrity of setting (NETR 2017).

Materials: Numerous alterations to Emerson Hall compromised the property's material integrity, including the removal of the faux-Mansard shingle roof; the addition of plaster cladding with equally spaced control joints; the addition of metal window awnings; the addition of metal and glass sliding doors; the addition of a metal decorative trellis around the top part of the south elevation wall; and alterations to the building's interior, including reconfiguration of hallways and room sizes, and orientations. All of these alterations introduced new materials to the subject property that were not part of the original design, and removed significant, character-defining materials from the building. Therefore, the building no longer retains its integrity of materials.

Workmanship: Similar to the issue with materials, the physical evidence of craftsman's skills in constructing the original building was compromised by the exterior alterations to the building. Therefore, the building no longer retains its integrity of workmanship.

Feeling: The alterations made to the subject property significantly affect the building's ability to correlate to a dormitory designed in the Neo-Mansard style of architecture. Currently, the building reads as a 21st century Modernist Découpage-style building, with varying wall textures and materials. This is consistent with other dormitories and campus buildings built in the Découpage style, or altered to achieve the look. Even though the building does still read as a student dormitory, the removal of character-defining features greatly affected the correlation with the Neo-Mansard style. Therefore, the building no longer retains its integrity of feeling.

Association: The building is associated with local builder and real estate developer Robert C. Powell. However, Emerson Hall does not represent one of his significant projects, and is a common example of dormitory architecture during a period of explosive growth. Therefore, the building retains its association to Robert C. Powell, but does not rise to any level of significance as a representation of his work and influence.

In summary, the subject property appears not eligible under all NRHP, CRHR, CHL, and City of Davis designation criteria. Although Emerson Hall does retain its integrity of location and association, it no longer retains integrity of setting, design, materials, workmanship, or feeling. Consequently, the property does not maintain the requisite integrity to warrant listing in the NRHP or CRHR, or as a CHL.

6 FINDINGS

6.1 Significance Evaluation Findings

Dudek surveyed Emerson Hall, which is part of the Cuarto neighborhood on the UC Davis campus. The property was photographed, researched, and recorded on the appropriate Department of Parks and Recreation forms (Appendix C). Emerson Hall was also evaluated for historical significance in consideration of NRHP, CRHR, CHL, and City of Davis designation criteria and integrity requirements. As a result of the significance evaluations, Emerson Hall does not appear to be eligible for inclusion in the NRHP, CRHR, CHL, or local register (status code 6Z).

6.2 Finding of No Adverse Effect

Built Environment Resources

Emerson Hall appears not eligible for inclusion in the NRHP, CRHR, CHL, or local register (6Z) due to compromised integrity. Emerson Hall is not considered a historic resource for the purposes of PRC Section 5024.5. Therefore, the proposed project would not adversely affect state-owned historic resources on the Master List (SHPO concurrence pending). Further, the proposed project would have a less-than-significant impact on historical resources for the purposes of CEQA.

Archaeological Resources

The project as currently designed would not impact known archaeological resources. In consideration of the severity of past disturbance to native soil, the topographic setting, and the negative subsurface testing results within 500 feet of the project site, the likelihood of encountering unanticipated significant subsurface archaeological deposits or features is considered relatively low. However, archaeological deposits with reported human remains have been identified within 2,000 feet within similar geomorphic conditions. Given the obscured nature of the project area and potential sensitivity of buried cultural deposits in the vicinity, limited archaeological monitoring is recommended. Monitoring efforts should be restricted to periodic inspections of initial ground-disturbing activities, and adjusted (discontinued or increased in frequency as needed) based on the recommendation of a qualified archaeologist once current subsurface conditions can be directly assessed for their potential to support archaeological deposits.

In addition to this periodic monitoring, standard protection measures for unanticipated discoveries of archaeological resources and human remains should occur and are provided below.

Unanticipated Discovery of Archaeological Resources

In the event that unanticipated archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find should immediately stop and the lead agency should be notified. A qualified archaeologist, meeting the

Secretary of the Interior's Professional Qualification Standards, should be retained and provided the opportunity to evaluate the significance of the find and determine whether or not additional study is warranted. Should it be required, temporary flagging may be installed around the resource to avoid any disturbances from construction equipment. Depending on the significance of the find under CEQA (14 California Code of Regulations Section 15064.5(f); PRC Section 21082), the archaeologist may record the find to appropriate standards (thereby addressing any data potential) and allow work to continue. If the archaeologist observes the discovery to be potentially significant under CEQA or Section 106 of the National Historic Preservation Act, additional efforts may be warranted.

Unanticipated Discovery of Human Remains

In accordance with Section 7050.5 of the California Health and Safety Code, if potential human remains are found, the lead agency and County Coroner must be immediately notified of the discovery. The coroner would provide a determination within 48 hours of notification. No further excavation or disturbance of the identified material, or any area reasonably suspected to overlie additional remains, can occur until a determination has been made. If the County Coroner determines that the remains are, or are believed to be, Native American, the coroner would notify the NAHC within 24 hours. In accordance with PRC Section 5097.98, the NAHC must immediately notify those persons it believes to be the MLD from the deceased Native American. Within 48 hours of this notification, the MLD would recommend to the lead agency her/his preferred treatment of the remains and associated grave goods.

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APPENDIX A

Preparer's Qualifications

Kate Geraghty Kaiser

Architectural Historian

Kate Geraghty Kaiser is an architectural historian with more than five years' professional experience as a cultural resource manager specializing in California Environmental Quality Act/National Environmental Quality Act (CEQA/NEPA) compliance, National Historic Preservation Act (NHPA) Section 106 compliance, reconnaissance and intensive level surveys, archival research, cultural landscapes, and GIS.

Ms. Kaiser meets the Secretary of the Interior's Professional Qualification Standards for both Architectural History and Archaeology. She is experienced at managing multidisciplinary projects in the lines of transportation and federal land management. She has experience preparing environmental compliance documentation in support of projects that fall under Sections 106 and 110 of the National Historic Preservation Act (NHPA), and the California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA).

EDUCATION

University of Oregon
M.S. Historic Preservation, 2017
Boston University
B.A. Archaeology, 2009

PROFESSIONAL AFFILIATIONS

California Preservation Foundation
Vernacular Architecture Forum
Association for Preservation Technology - Southwest

Dudek Project Experience (October 2017-present)

Development

Emerson Hall Replacement Project, University of California Davis, Yolo County, California

Ms. Kaiser served as architectural historian and author of the cultural resources report for the Emerson Hall Replacement Project. Ms. Kaiser contributed building development descriptions, archival research, historical context development, and historical significance evaluations for Emerson Hall. The project proposed to demolish Emerson Hall, a University of California, Davis dormitory, and replace it with a new 180,000 gsf which includes increasing bed capacity from 600 students to 800 students, updating and improving HVAC, fire suppression systems, plumbing, lighting, telecommunications, and high-speed internet access. , parking improvements, and demolishing select buildings.

Elkus Ranch Master Plan Project, University of California Davis, San Mateo County, California

Ms. Kaiser served as architectural historian and coauthor of the cultural resources report for the Elkus Ranch Master Plan Project. Ms. Kaiser contributed building development descriptions, archival research, in-field research, GIS data collection, and historical significance evaluations for buildings in the project. The project proposed to create a master plan for the ranch, which includes building improvements, parking improvements, and demolishing select buildings.

Los Angeles Department of Water and Power West Los Angeles District Yard Project, City of Los Angeles, Los Angeles County. California.

Ms. Kaiser served as architectural historian and author of the cultural resources report for the Los Angeles Department of Water and Power West Los Angeles District Yard Project. Preparation of the report involved extensive archival research, in-field research, historic context development, building development descriptions, historical significance evaluations, and DPR forms for each building of the project. The evaluation found the property ineligible under all NRHP, CRHR, and Los Angeles HCM designation criteria. The project proposed to demolish existing buildings and build new buildings and an underground parking structure.

Santa Monica City Yards Master Plan Project, City of Santa Monica, Los Angeles County California. Ms. Kaiser served as architectural historian and coauthor of the cultural resources report for the Santa Monica City Yards Master Plan Project contributed archival research, and building development section of the report. The project proposed to demolish existing structures at the City Yards.

Previous Federal Project Experience (2010-2016)

Mount Rainier National Park

White River Ranger Station Cultural Landscape Inventory
Ms. Kaiser served on a multidisciplinary team of three working for the Mount Rainier Historical Landscape Architect on a Cultural Landscape Inventory for the White River Ranger Station. Ms. Kaiser contributed archival research, in-field research, GIS data, and sections of the report including building descriptions, a historic and prehistoric context section, site chronology, and significance evaluations. The project proposed that the site be listed among the park's many cultural landscapes.

Death Valley National Park

Cultural Resources Project (CRP: 15-034) Ms. Kaiser served as the crew chief and project manager for survey and evaluation of petroglyph sites in a remote canyon of the park. The project involved re-recording four large scale petroglyph sites to Park Service-wide standards, gathering accurate GIS data, and developing new California DPR forms for sites. In addition to managing a fieldwork crew, Ms. Kaiser conducted archival research, CHRIS records search, developed the prehistoric and historical contexts, authored individual DPR site records, input data into appropriate GIS and record databases, corresponded with the Information Center in Riverside, CA, and authored the final report.

Cultural Resources Project (CRP: 15-002) Ms. Kaiser served as the crew chief and project manager for a park wide random sample survey project. Ms. Kaiser assigned fieldwork to two interns, processed collected GIS data and photograph data, and reviewed report sections written by interns.

Cultural Resources Project (CRP: 14-010) Ms. Kaiser served as the crew chief and project manager for survey and evaluation of cabin sites in Death Valley National Park. The project involved identifying, recording, and assessing the significance of 17 cabins sites (which included cabins, outbuildings, circulation, site features, and archaeological deposits) located throughout Death Valley National Park. Accurate GIS data, and new California DPR forms were created for sites. After the conclusion of fieldwork, a historical context was developed for each site and a broader historical settlement context was researched and re-written as needed. Though a historical mining context had already been written for the park, interviews, historical documentation, and archival documents from the County Courthouse and local governments required an update of the 30+ year old document. Accurate building maps and drawings were developed and submitted with the California DPR reports. This project involved supervising multiple archaeological technician interns and park volunteers.

Cultural Resources Project (CRP: 13-046) Ms. Kaiser served the archaeology resource advisor (READ) for the Scotty's Castle Fire in 2013. This involved being called to the scene of the fire and monitoring firefighter activities during suppression, surveying burned over archaeological sites for damage from fire or suppression efforts, and submitting a report which was used to apply for restoration grants.

Cultural Resources Project (CRP: 13-023) Ms. Kaiser served as the crew chief and project manager for survey and evaluation of six borax surface mining sites on the Death Valley salt pan. The project involved recording six sites located with aerial imagery and believed to be associated with historical borax mining sites in the park. Ms. Kaiser conducted archival research, CHRIS records search, developed the prehistoric and historical contexts, authored individual DPR site records, input data into appropriate GIS and record databases, corresponded with the Information Center in Riverside, CA, and authored the final report. Additionally Ms. Kaiser presented her findings at the Keeler Conference for Owens Valley archaeology 2014.

Cultural Resources Project (CRP: 13-043) Ms. Kaiser served as the crew chief and project manager for survey and evaluation of 28 prehistoric archaeological sites in the Ubehebe Crater area in preparation for a road widening project. This involved surveying and evaluating all sites within the area of potential effect, providing baseline condition assessment data, correcting outdated or misreported data, and authoring a report on sites in the project area.

Cultural Resources Project (CRP: 12-009) Ms. Kaiser served as the cultural resources monitor for the Cowan Seismograph placement project. This involved identifying and assessing the condition of archaeological sites in the projects area of potential effect, in-person monitoring while seismographs were placed, and writing the final report on effects.

Cultural Resources Project (CRP: 12-005) Ms. Kaiser served on a crew of three archaeological technicians for a wide scale site recording project in the Nevada Triangle Mining District. Together with the team, Ms. Kaiser recorded over 50 new historical archaeological sites and 11 prehistorical archaeological sites for a Section 110 project. Accurate GIS data and new DPR forms were created for each site. Ms. Kaiser authored sections of each DPR site record, and developed the prehistorical and historical context for the final report.

Cultural Resources Project (CRP: 11-087) Ms. Kaiser served as the crew chief and project manager for survey and evaluation of twelve new prehistoric archaeological sites in the southern Panamint Mountain range, in a previously unsurveyed area, for a Section 110 project. Ms. Kaiser conducted archival research, CHRIS records search, developed the prehistoric and historical contexts, authored individual DPR site records, input data into appropriate GIS and ASMIS record databases, corresponded with the Information Center office in Riverside, CA, and authored the final report.

Cultural Resources Project (CRP: 11-052) Ms. Kaiser served as the crew chief and project manager for survey and evaluation of 13 new and 10 previously recorded prehistorical archaeological sites in the Butte Valley area of Death Valley National Park. Ms. Kaiser conducted archival research, CHRIS records search, developed the prehistoric and historical contexts, authored individual DPR site records, input data into appropriate GIS and ASMIS record databases, corresponded with the Information Center in Riverside, CA, and authored the final report.

Cultural Resources Project (CRP: 10-073) Ms. Kaiser served as the crew chief and project manager for survey and condition assessment of 32 previously recorded archaeological sites in the Butte Valley area of Death Valley National Park. Site conditions, photographs and accurate GIS data were recorded for ASMIS record databases and updated DPR forms were sent to the Information Center in Riverside. Ms. Kaiser authored the final report.

The project involved re-recording four large scale petroglyph sites to Park Service-wide standards, gathering accurate GIS data, and developing new California DPR forms for sites. In addition to managing a fieldwork crew, Ms. Kaiser conducted archival research, CHRIS records search, developed the prehistoric and historical contexts, authored individual DPR site records, input data into appropriate GIS and record databases, corresponded with the Inyo County CHRIS office in Riverside, CA, and authored the final report.

Publications

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Geraghty, Kathryn. 2017. "On the Construction and Rehabilitation of the Southern Pacific Train Depot in Springfield, Oregon." Associated Students for Historic Preservation Journal. Spring/Summer 2017.

Geraghty, Kathryn, Rachel Ellenson, Royce Utterback. 2016."White River Ranger Station Cultural Landscape Inventory." Cultural Landscape Inventory (CLI), National Park Service. December 2016.

Geraghty, Kathryn and Corey Lentz. 2016. "P. Augustus Peterson House." Historic City Landmark nomination, City of Eugene, OR. May 2016. (Accepted by Eugene Planning Division November 2016)

Geraghty, Kathryn. 2015. "CRP: 15-034: Green water Canyon Petroglyph Site Project Report." White paper, National Park Service. May 2015.

Geraghty, Kathryn. 2015. "CRP: 14-010: Cabin Project Report." White paper, National Park Service. February 2015.

Geraghty, Kathryn. 2014. "Pile It High: Five New Borax Archaeological Sites on the Valley Floor" Paper presented to the annual Keeler Conference. July 2014.

Geraghty, Kathryn. 2014. "CRP: 13-023: Five New Borax Sites Documentation and Trip Report." White paper, National Park Service. May 2014.

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Geraghty, Kathryn. 2011. "CRP: 11-052: "Arrastre Springs ASMIS Condition Assessment Report." White paper, National Park Service. September 2011.

Geraghty, Kathryn. 2011. "Return to Butte Valley: Recent Observations in the Southern Panamints" Paper presented to the annual Keeler Conference. July 2011.

Geraghty, Kathryn. 2011. "CRP: 10-073: Butte Valley ASMIS Condition Assessment Report." White paper, National Park Service. January 2011.

Geraghty, Kathryn and Howard Morrison. 2010. "CRP: 10-065: Wildrose ASMIS Condition Assessment Report." White paper, National Park Service. November 2010.

Samantha Murray, MA

Senior Architectural Historian and Built Environment Lead

Samantha Murray is a senior architectural historian with 12 years' professional experience in in all elements of cultural resources management, including project management, intensive-level field investigations, architectural history studies, and historical significance evaluations in consideration of the California Register of Historical Resources (CRHR), the National Register of Historic Places (NRHP), and local-level evaluation criteria. Ms. Murray has conducted hundreds of historical resource evaluations and developed detailed historic context statements for a multitude of property types and architectural styles, including private residential, commercial, industrial, educational, medical, ranching, mining, airport, and cemetery properties, as well as a variety of engineering structures and objects. She has also provided expertise on numerous projects requiring conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

EDUCATION

California State University, Los Angeles
MA, Anthropology, 2013

California State University, Northridge
BA, Anthropology, 2003

PROFESSIONAL AFFILIATIONS

California Preservation Foundation

Society of Architectural Historians

National Trust for Historic Preservation

Ms. Murray meets the Secretary of the Interior's Professional Qualification Standards for both Architectural History and Archaeology. She is experienced managing multidisciplinary projects in the lines of transportation, transmission and generation, federal land management, land development, state and local government, and the private sector. She has experience preparing environmental compliance documentation in support of projects that fall under the California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA), and Sections 106 and 110 of the National Historic Preservation Act (NHPA). She also prepared numerous Historic Resources Evaluation Reports (HRERs) and Historic Property Survey Reports (HPSRs) for the California Department of Transportation (Caltrans).

Dudek Project Experience (2014-2017)

Development

Yosemite Avenue-Gardner Avenue to Hatch Road Annexation Project, City of Merced, Merced County, California. Ms. Murray managed and reviewed the historic resource significance evaluation of a single-family residence/agricultural property within the proposed project site. The evaluation found the property not eligible under all NRHP and CRHR designation criteria. The project proposes to annex 70 acres from Merced County to the City of Merced and to construct and operate the University Village Merced Student Housing and Commercial component on an approximately 30-acre portion of the project site. No development is proposed on the remaining 40 acres.

Schouten House Property Evaluation, California State University, Chico Research Foundation, Butte County, California. Ms. Murray prepared a historic resource evaluation report and DPR form for a former single-family residence located at 2979 Hegan Lane in Butte County, California, in consideration of CRHR and local level eligibility criteria and integrity requirements. The University Research Foundation was proposing demolition of the property.

Avenidas Expansion Project, City of Palo Alto, Santa Clara County, California. Ms. Murray peer reviewed a historical resource evaluation report for the property at 450 Bryant Street. The peer review assessed the report's adequacy as an evaluation in consideration of state and local eligibility criteria and assessed the project's conformance with the Secretary of the Interior's Standards for Rehabilitation.

Robertson Lane Hotel Commercial Redevelopment Project, City of West Hollywood, California. Ms. Murray is currently serving as architectural historian and peer reviewer of the historical evaluation report. The project involved conducting a records search, archival research, consultation with local historical groups, preparation of a detailed historic context statement, evaluation of three buildings proposed for demolition in consideration of local, CRHR, and NRHP designation criteria, and assistance with the EIR alternatives analysis.

Rocketship Senter Road Public Elementary School Project, City of San Jose, Santa Clara County, California. Ms. Murray served as architectural historian and prepared a historic resource evaluation report in compliance with the City of San Jose's historic preservation ordinance. Ms. Murray evaluated a 1960s church building in consideration of NRHP, CRHR, and local designation criteria and integrity requirements.

Jack in the Box Drive Through Restaurant Project, City of Downey, Los Angeles County, California. Ms. Murray served as architectural historian and lead author of the cultural resources study which included evaluation of two historic resources in consideration of national, state, and local criteria and integrity requirements. The study also included a records search, survey, and Native American Coordination.

San Carlos Library Historical Resource Technical Report, City of San Diego, California. Ms. Murray served as architectural historian and author of the Historical Resource Technical Report for the San Carlos Library. Preparation of the report involved conducting extensive building development and archival research on the library building, development of a historic context, and a historical significance evaluation in consideration of local, state, and national designation criteria and integrity requirements. The project proposes to build a new, larger library building.

Historical Evaluation of 3877 El Camino Real, City of Palo Alto, California. Ms. Murray served as architectural historian, originally providing a peer review of another consultant's evaluation. The City then asked Dudek to re-do the original evaluation report. As part of this work Ms. Murray conducted additional archival research on the property and evaluated the building for historical significance in consideration of local, state, and national designation criteria and integrity requirements. The project proposes to demolish the existing building and develop new housing.

429 University Avenue Historic Resources Evaluation Report Peer Review, City of Palo Alto, California. Ms. Murray conducted a peer review of a study prepared by another consultant, and provided a memorandum summarizing the review, comments, and recommendations, and is currently working on additional building studies for the City of Palo Alto.

1050 Page Mill Road Historic Resources Evaluation Report Peer Review, City of Palo Alto, Santa Clara County, California. Ms. Murray conducted a peer review of a study prepared by another consultant, and provided a memorandum summarizing the review, comments, and recommendations.

Big Chico Creek Ecological Reserve (BCCER) Henning Property Historical Evaluation, California State University, Chico, California. Ms. Murray authored the historical significance evaluation report for a property located at 3521 14 Mile House Road as requested by the California State University Chico Research Foundation. The property is historically known as the Henning Property and has served as the BCCER conference center in recent years. The Foundation is considering demolition of the existing property due to numerous safety concerns and the high cost associated with bringing the building up to current code requirements.

635 S. Citrus Avenue Proposed Car Dealership MND, City of Covina, California. Ms. Murray served as architectural historian and archaeologist, and author of the cultural resources MND section. The project proposes to convert an existing Enterprise Rent-a-Car facility into a car dealership. As part of the MND section, Ms. Murray conducted a records search, Native American coordination, background research, building permit research, and a historical significance evaluation of the property. The study resulted in a finding of less-than-significant impacts to cultural resources.

8228 Sunset Boulevard Tall Wall Project, City of West Hollywood, California. Ms. Murray prepared DPR forms and conducted building development and archival research to evaluate a historic-age office building. The project proposes to install a tall wall sign on the east side of the building.

Historic Resource Evaluation of 8572 Cherokee Drive, City of Downey, California. Ms. Murray served as architectural historian and project manager. She prepared a historical resource evaluation report and a set of DPR forms to evaluate a partially demolished residence that was previously determined eligible for inclusion in the NRHP (known as the Al Ball House). The current owner is proposing to subdivide the lot and develop four new homes.

Montclair Plaza Expansion Project, City of Montclair, California. Resources MND section, which included an evaluation of several department store buildings proposed for demolition. The project proposes to expand the existing Montclair Plaza Shopping Center.

Foothill 533 IS/MND, City Ventures, City of Glendora, California. Ms. Murray served as architectural historian, archaeologist, and author of the cultural resources IS/MND section. As part of the cultural study, Ms. Murray recorded and evaluated five historic-age commercial/industrial properties proposed for demolition as part of the project. The project proposes to develop a series of new townhomes.

Normal Street Project, City of San Diego, California. Ms. Murray served as architectural historian and co-author of the Historical Resources Technical Report for properties located at 3921-3923; 3925-3927; 3935 Normal Street for the City of San Diego's Development Services Department Ms. Murray assisted with the final round of comments from the City and wrote the historical significance evaluations for all properties included in the project.

Education

Kings Beach Elementary School Modernization Project, Tahoe Truckee Unified School District, Tahoe City, Placer County, California. Ms. Murray served as architectural historian and co-author of the cultural resources study. The study involved evaluation of the existing school for NRHP, CRHR and local eligibility, conducting archival and building development research, a records search, and Native American coordination.

Cypress College Facilities Master Plan Program EIR, City of Cypress, Orange County, California. The North Orange County Community College District (NOCCCD) is undertaking a comprehensive improvement and building program to make upgrades and repairs to existing buildings, as well as to construct new facilities to improve the safety and education experience of those attending Cypress College. The College proposed to implement the Facilities Master Plan to more effectively meet the space needs of the projected on-campus enrollment through the next decade and beyond, while constructing and renovating facilities to meet the District's instructional needs. Ms. Murray authored the cultural resources study for the project, which included a significance evaluation of all 1960s and 1970s buildings on campus proposed for demolition or renovation. As a result of the significance evaluation, including consideration of CRHR evaluation criteria and integrity requirements, the original 1960s–1970s campus appears to be eligible as a historic district under CRHR Criterion 3 for conveying a concentration of planned buildings, structures, and associated elements united aesthetically by their embodiment of the Brutalist style. The study also entailed conducting extensive archival and building development research, a records search, Native American coordination, detailed impacts assessment, and development of mitigation measures for project conformance with the Secretary of the Interior's Standards for Rehabilitation.

Tahoe Lake Elementary School Facilities Master Plan Project, Tahoe Truckee Unified School District, Tahoe City, Placer County, California. Ms. Murray served as architectural historian and lead author of the cultural resources study. She recorded and evaluated the Tahoe Lake Elementary School Building for NRHP, CRHR, and local level criteria and integrity considerations. The study also entailed conducting archival and building development research, a records search, and Native American coordination.

San Diego State University (SDSU) Open Air Theater Renovation Project, SDSU and Gatzke Dillon & Balance, LLP, San Diego, California. Ms. Murray served as architectural historian and prepared a technical memorandum that analyzed the project's potential to impact the OAT theater (a contributing property to the San Diego State College NRHP Historic District). This included conducting a site visit, reviewing proposed site and design plans, and preparing a memorandum analyzing the project's conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

Mt. San Jacinto College (MSJC) Master Plan Project, City of San Jacinto, Riverside County, California. Ms. Murray served as architectural historian, archaeologist, and lead author of the cultural resources study. As part of the study she evaluated 11 buildings for NRHP, CRHR, and local level criteria and integrity requirements. The buildings were constructed prior to 1970 and proposed for demolition as part of the project. The study also entailed conducting extensive archival and building development research at District offices, a records search, and Native American coordination.

San Diego State University (SDSU) Engineering and Sciences Facilities Project, SDSU and Gatzke Dillon & Balance, LLP, San Diego, California. Ms. Murray served architectural historian, archaeologist, and lead author of the Cultural Resources Technical Report for the SDSU Engineering and Interdisciplinary Sciences Building Project. The project required evaluation of 5 historic-age buildings in consideration of NRHP, CRHR, and local designation criteria and integrity requirements, an intensive level survey, Native American coordination, and a records search. The project proposes to demolish four buildings and alter a fifth as part of the university's plan to update its engineering and science facilities.

Fullerton College Facilities Master Plan Program EIR, North Orange County Community College District, City of Fullerton, Orange County, California. 2017. The North Orange County Community College District (NOCCCD) is undertaking a comprehensive improvement and building program to make upgrades and repairs to existing buildings, as well as to construct new facilities to improve the safety and education experience of those attending Fullerton College. The College proposed to implement the Facilities Master Plan to more effectively meet the space needs of the projected on-campus enrollment through the next decade and beyond, while constructing and renovating facilities to meet the District's instructional needs. Ms. Murray co-authored and oversaw the cultural resources study. All buildings and structures on campus over 45 years old and/or or proposed for demolition/substantial alteration as part of the proposed project were photographed, researched, and evaluated in consideration of NRHP, CRHR, and local designation criteria and integrity requirements, and in consideration of potential impacts to historical resources under CEQA. As a result of the significance evaluation, three historic districts and one individually eligible building were identified within the project area. The study also entailed conducting extensive archival and building development research, a records search, Native American coordination, detailed impacts assessment, and development of mitigation measures for project conformance with the Secretary of the Interior's Standards for Rehabilitation.

The Cove: 5th Avenue Chula Vista Project, E2 ManageTech Inc., San Diego, California. Ms. Murray served as architectural historian and co-author of the CEQA report. The project involved recordation and evaluation of several properties functioning as part of the Sweetwater Union High School District administration facility, proposed for redevelopment, as well as an archaeological survey of the project area.

Energy

J-135I Electrical Distribution and Substation Improvements and J-600 San Dieguito Pump Station Replacement Project, Santa Fe Irrigation, San Diego County, California. Ms. Murray served as architectural historian and prepared the Department of Parks and Recreation (DPR) forms and associated memo concerning replacement of the original 1964 San Dieguito Pump Station. Ms. Murray recorded and evaluated the pump house for state and local significance and integrity considerations. As part of this effort she conducted background research, prepared a brief historic context, and a significance evaluation.

Expert Witness

Robert Salamone vs. The City of Whittier. Ms. Murray was retained by the City of Whittier to serve as an expert witness for the defense. She peer reviewed a historic resource evaluation prepared by another consultant and provided expert testimony regarding the contents and findings of that report as well as historic resource requirements on a local and state level in consideration of the City of Whittier's Municipal Code Section 18.84 and CEQA. Judgement was awarded in favor of the City on all counts.

Healthcare

Hamilton Hospital Residential Care Facility Project, City of Novato, Marin County, California. Ms. Murray served as architectural historian, prepared a cultural resources study, and assessed the proposed project's design plans for conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. The project proposed to construct an addition and make alterations to an NRHP-listed district contributing property. With review from Ms. Murray, the project was able to demonstrate conformance with the Standards for Rehabilitation.

Culver Place Assisted Living Project, DJB Architects, Culver City, California. Ms. Murray served as architectural historian, archaeologist, and author of the Letter Report for a Cultural and Paleontological Resources Study. Ms. Murray conducted the intensive-level cultural resources survey of the project area, conducted background research, and coordinated with local Native American groups. The project proposes to construct an assisted living facility on a large private property in Culver City.

Transportation

SR-86 and Neckel Road Intersection Improvements and New Traffic Signal Light Project, Caltrans, City of Imperial, California. Ms. Murray served as Principal Architectural Historian, and author of the HPSR and Finding of No Adverse Effect document. The project involved an intensive field survey, Native American and historic group coordination, a records search, and recordation and NRHP and CRHR evaluation of two historic drainage canals proposed for improvement as part of Caltrans intersection improvement project. All documents were signed and approved by Caltrans District 11 and the Caltrans Cultural Studies Office.

California Boulevard Roundabout Project, OmniMeans, City of Napa, California. The California Department of Transportation (Caltrans) and the City of Napa worked together to deliver a cooperative project encompassing three intersections: First Street/California Boulevard, Second Street/California Boulevard, and State Route 29 (SR-29) northbound off-ramp/First Street. The City of Napa (City) proposed improvements at the First Street/California Boulevard and Second Street/California Boulevard intersections within the County of Napa. It was proposed to reconfigure these two intersections to improve traffic operations and accommodate the reversal in travel direction on First and Second Streets between California Boulevard and Jefferson Street. The project also proposes to modify the SR-29 northbound off-ramp and First Street intersection with a modern roundabout. Ms. Murray served as Principal Architectural Historian and archaeologist, preparing of the Area of Potential Effects (APE) map and subsequent preparation of Caltrans documentation, including an Archaeological Survey Report (ASR), Historical Resources Evaluation Report (HRER), Finding of No Adverse Effect Report (FNAE), and Historic Property Survey Report (HPSR). This included an evaluation of seven previously unevaluated properties for the NRHP and CRHR, and consideration of impacts to the West Napa Historic District.

Water/Wastewater

Morena Reservoir Outlet Tower Replacement Project, City of San Diego, California. Ms. Murray evaluated the 1912 Morena Dam and Outlet Tower for NRHP, CRHR, and local level eligibility and integrity requirements. The project entailed conducting extensive archival research and development research at City archives, libraries, and historical societies, and preparation of a detailed historic context statement on the history of water development in San Diego County.

69th and Mohawk Pump Station Project, City of San Diego, California. Ms. Murray served as architectural historian and lead author of the Historical Resource Technical Report for the pump station building on 69th and Mohawk Street. Preparation of the report involves conducting extensive building development and archival research on the pump station building, development of a historic context, and a historical significance evaluation in consideration of local, state, and national designation criteria and integrity requirements.

Pump Station No. 2 Power Reliability and Surge Protection Project, City of San Diego, California. Ms. Murray served as architectural historian and prepared an addendum to the existing cultural resources report in order to evaluate the Pump Station No. 2 property for NRHP, CRHR, and local level eligibility and integrity requirements. This entailed conducting additional background research, building development research, a supplemental survey, and preparation of a historic context statement.

Orange County Central Utility Facility Upgrade, County of Orange Public Works, City of Santa Ana, Orange County, California. To further the County's long-term goals of operational safety, improved efficiency, cost effectiveness, and supporting future campus development plans, the proposed Central Utility Facility Upgrade project consisted of improvements and equipment replacements recommended by the Strategic Development Plan for the CUF's original utility systems. Ms. Murray served as architectural historian and archaeologist, and prepared the cultural resources MND section. As part of this effort Ms. Murray conducted a detailed review of historic resource issues within and around the proposed project area to assess potential impacts to historic buildings and structures. The proposed project involved improvements to 16 buildings located within the Civic Center Campus. As a result of the cultural resources analysis, it was determined that the proposed project would not result in a substantial adverse change to any of the historic-age buildings or the associated Civic Center Plaza walkways/landscaping.

Bear River Restoration at Rollins Reservoir Project, Nevada Irrigation District, Nevada and Placer Counties, California. Ms. Murray served as architectural historian and co-author of the Cultural Resources Inventory Report. Ms. Murray conducted background research on the 1963 Chicago Park Powerhouse Bridge and prepared a historic context for the Little York Township and Secret Town Mine.

Otay River Estuary Restoration Project (ORERP), Poseidon Resources, South San Diego Bay, California. Ms. Murray served as architectural historian for the documentation of Pond 15 and its associated levees. The project proposes to create new estuarine, salt marsh, and upland transition habitat from the existing salt ponds currently being used by the South Bay Salt Works salt mining facility. Because the facility was determined eligible for listing in the NRHP, the potential impacts caused by breeching the levees, a contributing feature of the property, had to be assessed.

Other Project Experience (2008-2014)

LADPW BOE Gaffey Pool and Bathhouse Project, Los Angeles County, California (2014). Ms. Murray served as project manager, field director for the intensive-level cultural resources survey, and primary author of the cultural resources technical report. Ms. Murray reviewed proposed design plans for new construction within an NRHP-listed historic district for conformance with the Secretary of the Interior's Standards. The LADPW BOE proposed to conduct various improvements to the Gaffey Street Pool and surrounding area, located in Upper Reservation of Fort McArthur in San Pedro, California.

Metro Green Line to LAX Project (2013-2014). Ms. Murray served as project manager for a multi-disciplinary project that includes cultural resources, biology, and paleontology. The Los Angeles County Metropolitan Transportation Authority (Metro), Federal Transit Administration (FTA), Federal Aviation Administration (FAA) and Los Angeles World Airports (LAWA) have initiated an Alternatives Analysis (AA)/Draft EIS/Draft EIR for the Metro Green Line to Los Angeles International Airport (LAX) project. The AA/DEIS/DEIR is being prepared to comply with NEPA and CEQA. This study will examine potential connections between the planned Metro Crenshaw / LAX Transit Corridor Project's Aviation/Century Station and the LAX Central Terminal Area (CTA) located approximately one mile to the west. Client: Terry Hayes Associates.

LADPW BOE Downtown Cesar Chavez Median Project, Los Angeles County, California (2013). Ms. Murray served as field director for the intensive-level cultural resources survey, and co-author of the Caltrans ASR and HRER. The City of Los Angeles Department of Public Works (LAPDW), Bureau of Engineering (BOE), proposes to provide for transportation enhancements along West Cesar Chavez Boulevard in the downtown area of Los Angeles. Client: LADPW BOE, Lead Agency: Caltrans, District 7.

Edwards Air Force Base Historic Context and Survey, Multiple Counties, California (2013). Ms. Murray served as lead architectural historian and project manager for survey and evaluation of 17 buildings and structures located throughout the base, and preparation of a Cold War historic context statement, an analysis of property types, and registration requirements for all built environment resources on base. Client: JT3/CH2M Hill.

San Gabriel Trench Grade Separation Project (Phases I, II, and III); Cities of San Gabriel, Alhambra, and Rosemead, Los Angeles County, California (2008–2010, 2011-2014). Ms. Murray served as Archaeologist, Architectural Historian, and Osteologist throughout various stages of the project. The project consisted of conducting a cultural resources assessment for a proposed grade separation located within the cities of San Gabriel, Alhambra, and Rosemead. The proposed project would lower a 2.2 mile section of Union Pacific Railroad tracks in the immediate vicinity of the historic Mission San Gabriel Arcángel. Ms. Murray was involved in both the archaeological and architectural history components of this project. This includes the archaeological and architectural history field surveys, archaeological testing of the site and completion of over 100 DPR forms for the evaluation of built environment resources. She also served as the on-site human osteologist. Client: Terry A. Hayes Associates, LLC. Agency: Caltrans.

Azusa Intermodal Parking Facility Project, Azusa, Los Angeles County, California (2012). Ms. Murray served as field director, assistant project manager, and primary report author for the intensive-level cultural resources survey and cultural resources technical report, which included evaluation of several built environment resources adjacent to an existing NRHP district. The City of Azusa proposed to construct an approximately 39-foot high, four-story parking structure, bus bays for passenger loading/unloading for layovers, and electric charging stations for patrons of the future Gold Line Foothill Extension Azusa Station. Client: Terry Hayes Associates.

Terminal Island Historic Building Evaluations, Los Angeles County, California (2011). Ms. Murray served as project manager, field director for the architectural history survey, and primary author of the technical report. She formally evaluated 16 Port of Los Angeles-owned properties on Terminal Island for NRHP and CRHR eligibility, as well as local level eligibility. Client: CDM; Port of Los Angeles.

LOSSAN San Luis Rey River and Second Track Project, Oceanside, San Diego County, California (2011). Ms. Murray served as primary author for the technical report and conducted the intensive-level cultural resources field survey. The project proposes to construct a new 0.6-mile section of double-track to connect two existing passing tracks, and replace the existing San Luis Rey River Bridge. She prepared the cultural resources technical report and evaluated the bridge for NRHP, CRHR, and local level criteria and integrity requirements. Client: HNTB Corporation.

LADPW BOE San Pedro Plaza Park Project, Los Angeles County, California (2011). Ms. Murray served as project manager, field director for the intensive-level cultural resources survey, and primary author of the cultural resources technical report. She evaluated the entire park for local, CRHR, and NRHP eligibility and integrity requirements. The LADPW BOE proposed to conduct various outdoor improvements to the San Pedro Plaza Park. Client: LADPW BOE.

Crenshaw /LAX Transit Corridor Project, Los Angeles County, California (2011). Ms. Murray supervised architectural history survey and participated in the evaluation of over 100 built environment resources that may be affected by the Los Angeles County Metropolitan Transportation Authority's (Metro's) proposed Crenshaw/LAX Transit Corridor Project. The project is approximately 8.5 miles in length and is located within the cities of Los Angeles and Inglewood, Los Angeles County, California. The project was subsequently approved by SHPO with no comments. Client: Terry Hayes Associates, LLC; Agency: Metro.

LOSSAN Control Point San Onofre to Control Point Pulgas Double Track Project, San Diego County, California (2011). Ms. Murray served as field director for the archaeological and architectural history survey and co-authored the technical report. She conducted a survey and evaluation of cultural resources in support of the Los Angeles to San Diego, California (LOSSAN) Control Point (CP) San Onofre to CP Pulgas Double Track Upgrade Project. The project is located within the boundaries of the Marine Corps Base (MCB) Camp Pendleton in Northern San Diego County, on federal land that is part of a long-term lease to the rail operator. Client: HNTB Corporation.

Half Moon Bay Airport Taxiway and Access Road Improvement Project, San Mateo County, California (2010). Ms. Murray served as field director for the archaeological and architectural history survey and co-authored the technical report. She conducted a cultural resources survey of 21.65 acres situated on three areas within the 313-acre airport property, and evaluated airport properties for the CRHR and NRHP. Half Moon Bay Airport is located approximately 5 miles north of the City of Half Moon Bay in unincorporated San Mateo County, California. Client: Coffman Associates.

Sunset Avenue Grade Separation Project, Riverside County, California (2010). Ms. Murray served as field director for the archaeological and architectural history survey and co-authored the ASR, HRER, and HPSR reports. The project involved a proposed grade separation of Sunset Avenue, which crosses the UPRR in the City of Banning, Riverside County. She conducted a 43.6-acre survey for cultural resources, and prepared environmental compliance documentation in accordance with Caltrans. Client: Kimley-Horn and Associates, Inc.; Agency: Caltrans District 8.

Hollister Avenue Bridge Seismic Retrofit Project, Santa Barbara County, California (2010). Ms. Murray supervised the architectural history survey of surrounding properties. The project proposed the seismic retrofit of Union Pacific Railroad (UPRR) Bridge 51C-0018 on Hollister Avenue in an unincorporated area of Santa Barbara County, located between UPRR mile posts 362.08 and 362.41. Client: Santa Barbara County Public Works Department; Agency: Caltrans District 5.

Nogales Grade Separation/Gale Avenue Widening/Evaluation of 938 Nogales Street; City of Industry, Los Angeles County, California (2009). Ms. Murray participated in the architectural history field survey of several properties and co-authored the report. The project consisted of conducting a cultural resources assessment for a proposed grade separation project that would lower Nogales Street beneath the Union Pacific Railroad tracks and widen a 0.83 mile section of Walnut Drive/Gale Avenue located in the City of Industry. Client: Terry A. Hayes Associates, LLC. Agency: Caltrans.

Integrated Cultural Resources Management Plan Update for MCLB Barstow, San Bernardino County, California (2011-2014). Served as project manager for the 2014 ICRMP update of the 2011 ICRMP that she authored. The update includes survey and evaluation of two historic road segments, recordation and preparation of a conditions assessment of the Rattlesnake Rock Art site, and revision of the NRHP nomination for the site. Client: NAVFAC Southwest.

Integrated Cultural Resources Management Plan, Naval Air Station, Lemoore, Kings County, California (2009-2012). Served as project manager and primary author of the Final ICRMP document. The project consists of preparing a management plan for the protection and management of cultural resources located within Naval Air Station, Lemoore. The management plan inventories known cultural resources, summarizes relevant laws and regulations, and establishes management priorities for the installation. Client: NAVFAC SW (U.S. Navy).

Integrated Cultural Resources Management Plan, Naval Weapons Station, Seal Beach, Detachment Corona, Riverside County, California (2009-2011). Served as project manager and primary author of the Advance Draft document. The project consists of preparing a management plan for the protection and management of cultural resources located within Naval Weapons Station, Seal Beach, Detachment Corona. The management plan inventories known cultural resources, summarizes relevant laws and regulations, and establishes management priorities for the installation. Client: NAVFAC SW (U.S. Navy).

Integrated Cultural Resources Management Plan, Naval Weapons Station, Seal Beach, Orange County, California (2009-2011). Served as project manager and primary author of the Advance Draft document. The project consists of preparing a management plan for the protection and management of cultural resources located within Naval Weapons Station, Seal Beach. The management plan inventories known cultural resources, summarizes relevant laws and regulations, and establishes management priorities for the installation. Client: NAVFAC SW (U.S. Navy).

Integrated Cultural Resources Management Plan, Naval Air Weapons Station China Lake; Inyo, Kern, and San Bernardino Counties, California (2009-2011). Served as co-author of the final document. The project consists of preparing a management plan for the protection and management of cultural resources located within Naval Air Weapons Station China Lake. The management plan inventories known cultural resources, summarizes relevant laws and regulations, and establishes management priorities for the installation. Client: NAVFAC SW (U.S. Navy).

Select Technical Reports (as lead author)

Murray, Samantha. 2015. *Historic Report for the property located at 3167 Senter Road, San Jose, California 95111, Assessor's Parcel Number (APN) 494-01-022*. Prepared for Launchpad Development and the City of San Jose.

Murray, Samantha and Salli Hosseini. 2015. *Cultural Resources Study for Tahoe Lake Elementary School Facilities Master Plan Project, Tahoe City, Placer County, California*. Prepared for the Tahoe Truckee Unified School District.

Murray, Samantha. 2015. *SDSU Open Air Theatre Renovation Historical Resources Technical Memorandum*. Prepared for SDSU.

Murray, Samantha. 2015. *Cultural Resources Study for the Mt. San Jacinto Community College District, San Jacinto Campus Master Plan Project, City of San Jacinto, Riverside County, California*. Prepared for the Mt. San Jacinto Community College District.

Murray, Samantha and Salli Hosseini. 2015. *Cultural Resources Study for the Jack in the Box Drive-Through Restaurant Project, City of Downey, Los Angeles County, California*. Prepared for the City of Downey.

Murray, Samantha. 2015. *Cultural Resources Study for the Hamilton Hospital Residential Care Facility Project City of Novato, Marin County, California*. Prepared for the City of Novato.

Murray, Samantha. 2015. *Historic Property Survey Report for the SR-86 Neckel Road Intersection Improvements and New Traffic Signal Light Project in the City and County of Imperial, California.* Prepared for the City of Imperial and Caltrans District 11.

Murray, Samantha. 2015. *Historical Resources Evaluation Report for the California Boulevard Roundabouts Project, City and County of Napa, California*. Prepared for the City of Napa and Caltrans District 4.

Murray, Samantha. 2015. *Historic Property Survey Report for the California Boulevard Roundabouts Project, City and County of Napa, California*. Prepared for the City of Napa and Caltrans District 4.

Samantha Murray, Salli Hosseini, Angela Pham, and Adam Giacinto. 2015. *Cultural/Historical Resource Technical Report: Morena Reservoir Outlet Tower Replacement Project Lake Morena Village, San Diego County, California, Services R-308078 Task Order No. 30*. Prepared for the City of San Diego.

Samantha Murray, Salli Hosseini, Adriane Dorrler, and Brad Comeau. 2015. *Cultural/Historical Resource Technical Report: 69th and Mohawk Pump Station 5017 69th Street / 6910 Mohawk Street, San Diego, California 92115*. Prepared for the City of San Diego.

Murray, Samantha and Adam Giacinto. 2015. *Cultural Resources Technical Report for the SDSU Engineering and Interdisciplinary Sciences Building*. Prepared for SDSU.

Murray, Samantha. 2015. *Historical Resource Technical Report: San Carlos Library 7265 Jackson Drive, San Diego, California 92119*. Prepared for the City of San Diego.

Murray, Samantha. 2015. *Cultural Resources Study for the Robertson Lane Hotel and Commercial Redevelopment Project, City of West Hollywood, Los Angeles County, California*. Prepared for the City of West Hollywood.

Murray, Samantha. 2015. *Historic Resource Evaluation Report: 3877 El Camino Real Palo Alto, California 94306*. Prepared for the City of Palo Alto.

Murray, Samantha. 2015. *Addendum to Phase I Cultural Inventory for Pump Station No. 2 Power Reliability and Surge Protection Project, San Diego County, California (WBS# S-00312.02.02)*. Prepared for the City of San Diego.

Murray, Samantha. 2015. *Significance Evaluation of the Property at 8572 Cherokee Drive, City of Downey, Los Angeles County, California*. Prepared for the City of Downey.

Murray, Samantha. 2014. *Peer Review of Historic Resource Evaluations for 429-447 University Avenue and 425 University Avenue, Palo Alto, California*. Prepared for the City of Palo Alto.

Murray, Samantha. 2014. *Peer Review of the Draft Historic Resource Evaluation for 1050 Page Mill Road, Palo Alto, California*. Prepared for the City of Palo Alto.

Murray, Samantha. 2014. *Significance Evaluation of the Property at 3521 14 Mile House Road, Forest Ranch, Butte County, California*. Prepared for California State University, Chico.

Murray, Samantha, Adam Giacinto, and Justin Castells. 2014. *Cultural and Paleontological Resources Inventory for the Cove Development project, City of Chula Vista, California*. Prepared for E2 ManageTech Inc.

Murray, Samantha, Steven Treffers, and John Dietler. 2014. *Cultural Resources Survey Report for the Gaffey Pool and Bathhouse Project in San Pedro, City of Los Angeles, Los Angeles County, California*. Prepared for the City of Los Angeles Department of Public Works Bureau of Engineering.

Murray, Samantha. 2013. *Historic Property Survey Report for the Downtown Cesar Chavez Median Project, City and County of Los Angeles, California*. Prepared for the City of Los Angeles Department of Public Works Bureau of Engineering and Caltrans District 7.

Murray, Samantha, Steven Treffers, and Shannon Carmack. 2013. *Historic Context Statement Report for Evaluation of Cold War-era Properties on Edwards Air Force Base, California*. Prepared for JT3, LLC.

Murray, Samantha, Steven Treffers, and Shannon Carmack. 2013. *Cultural Resources Survey Report for the Azusa Intermodal Parking Facility Project, City of Azusa, Los Angeles County, California*. Prepared for Terry A. Hayes Associates

Murray, Samantha, Steven Treffers, and John Dietler. 2012. *Final Cultural Resources Survey Report for the CP East Brook to CP Shell Double Track Project, San Diego County, California*. Prepared for HNTB Corporation.

Murray, Samantha and John Dietler. 2012. *Cultural Resources Survey Report for the Ford City Delivery Meter Station Project, Kern County, California*. Prepared for Mojave Pipeline Company.

Murray, Samantha, Steven Treffers, Mary Ringhoff, and Jan Ostashay. 2011. *Built Environment Evaluation Report for Properties on Terminal Island, Port of Los Angeles, City and County of Los Angeles, California*. Prepared for CDM and the Port of Los Angeles.

Murray, Samantha, Cheryle Hunt, and John Dietler. 2011. *Cultural Resources Survey Report for the South San Fernando Valley Park and Ride Project, City and County of Los Angeles, California*. Prepared for the City of Los Angeles Department of Public Works Bureau of Engineering.

Murray, Samantha, Brandi Shawn, and John Dietler. 2011. *Cultural Resources Survey Report for the San Pedro Plaza Park Project in San Pedro, City of Los Angeles, Los Angeles County, California*. Prepared for the City of Los Angeles Department of Public Works Bureau of Engineering.

Murray, Samantha and John Dietler. 2011. *Cultural Resources Survey Report for the WKN Wagner Wind Project, Palm Springs, Riverside County, California*. Prepared for the Altum Group.

Murray, Samantha, Laura Hoffman, and John Dietler. 2011. *Integrated Cultural Resources Management Plan for the Marine Corps Logistics Base, Barstow, California*. Prepared for the U.S. Department of the Navy NAVFAC SW and Marine Corps. Logistics Base Barstow.

Murray, Samantha, Robert Ramirez, and John Dietler. 2011. *Integrated Cultural Resources Management Plan for Naval Weapons Station Seal Beach, Detachment Corona, Riverside County, California*. Prepared for the U.S. Department of the Navy NAVFAC SW.

Murray, Samantha and John Dietler. 2010. *Cultural Resources Overview and Survey Report for the Poso Creek Delivery Meter Station Project, Kern County, California*. Prepared for El Paso Corporation.

Publications

Gross, C., Melmed, A., Murray, S., Dietler, S., and Gibson, H. 2012. *Osteological Analysis In Not Dead but Gone Before:* The Archaeology of Los Angeles City Cemetery, edited by H. Gibson and S. Dietler, AECOM Cultural Heritage Publication Number 4, San Diego.

Murray, S. 2013. *The People of Plaza Church Cemetery (1822-1844):* An Osteological Analysis of Los Angeles' First Cemetery. UMI Dissertation Publishing, ProQuest, LLC., Michigan.

Presentations

***Historical Resources under CEQA*. Prepared for the Orange County Historic Preservation Planner Working Group. Presented by Samantha Murray, Dudek. December 1, 2016.** Ms. Murray delivered a one-hour PowerPoint presentation to the Orange County Historic Preservation Planner Working Group, which included planners from different municipalities in Orange County, regarding the treatment of historical resources under CEQA. Topics of discussion included identification of historical resources, assessing impacts, avoiding or mitigating impacts, overcoming the challenges associated with impacts to historical resources, and developing effective preservation alternatives.

***Knowing What You're Asking For: Evaluation of Historic Resources*. Prepared for Lorman Education Services. Presented by Samantha Murray and Stephanie Standerfer, Dudek. September 19, 2014.** Ms. Murray and Ms. Standerfer delivered a one-hour PowerPoint presentation to paying workshop attendees from various cities and counties in Southern California. The workshop focused on outlining the basics of historical resources under CEQA, and delved into issues/challenges frequently encountered on preservation projects.

Relevant Training

- CEQA and Historic Preservation: A 360 Degree View, CPF, 2015
- Historic Designation and Documentation Workshop, CPF, 2012
- Historic Context Writing Workshop, CPF, 2011

- Section 106 Compliance Training, SWCA, 2010
- CEQA Basics Workshop, SWCA, 2009
- NEPA Basics Workshop, SWCA, 2008
- CEQA, NEPA, and Other Legislative Mandates Workshop, UCLA, 2008

William Burns, RPA

Project Archaeologist

William Burns is an archaeologist with over 10 years' experience in cultural resource management. He is highly knowledgeable about the California Environmental Quality Act, the National Environmental Policy Act, the Native American Graves Protection and Repatriation Act, and the National Historic Preservation Act, particularly the Section 106 process. Mr. Burns evaluates buildings and districts for archaeological sensitivity and possible inclusion on the National Register of Historic Places. He assesses project and building plans for archaeological sensitivity and reviews archaeological reports on the state government regulatory end of the process.

Mr. Burns possesses expertise about Pre-contact archaeological sites, paleocoastline reconstruction, and artifact identification and analysis. He applies this expertise to archaeological report writing and editing for Section 106 projects. He also serves on field crews and as a supervisor on archaeological projects, overseeing surveys, site examinations, data recoveries, and artifact database creation and maintenance. For precise site mapping, Mr. Burns uses GPS devices, primarily Trimble GEO XH, ArcGIS, and Maptitude.

EDUCATION

MSc, Coastal and Marine Archaeology, 2010, University of York, Department of Archaeology, York, United Kingdom

BA, Anthropology, Minor in Mathematics, 2004, University of Massachusetts at Amherst, Massachusetts

CERTIFICATIONS

Register of Professional Archaeologists (RPA)

Master Diver (National Association of Underwater Instructors)

OSHA HAZWOPER (40-hour)

Basic First Aid/BBP (American Heart Association)

Adult CPR/AED (American Heart Association)

Project Experience

California High-Speed Rail Project, Construction Package 2-3, Fresno to Bakersfield, Dragados / Flatiron Joint Venture, Fresno, Kings, Counties of Tulare and Kern, California. Conducted field survey, organize and manage cultural, tribal, and paleontological monitors, prepared cultural resources survey reports and monthly summaries.

Edwards Air Force Base Solar Project, Terra-Gen, Kern County, California. Conducted records search for large solar project.

Little Bear Solar Project, First Solar, Inc., Mendota, California. Conducted field survey, prepared cultural resources report for solar energy development.

Siskiyou Hall Project, California State University, Chico, Butte County, California. Prepared cultural resources report for campus construction project.

McCown Minor Land Division Project, Davenport Construction, Placer County, California. Prepared cultural resources report for land division project.

Castilleja School Project, City of Palo Alto, California. Prepared cultural resources report for school improvements.

Roberts' Ranch Project, City of Vacaville, California. Conducted field survey for residential development.

Bellevue 7 Ranch Project, Ryder Homes of California, Inc., City of Santa Rosa, California. Conducted field survey, prepared cultural resources report for residential development.

Rohnert Park Water Tank Project, City of Rohnert Park, California. Conducted extended phase I field survey, prepared cultural resources report for water tank construction.

Peach Tree Solar Project, Sunworks, Inc., Yuba County, California. Conducted field survey, performed records search, prepared cultural resources report for solar installation at country club.

River Bluff Lower Terrace Project, O'Dell Engineering., City of Ceres, California. Conducted field survey, prepared cultural resources report for city park improvements.

El Dorado Irrigation District Flume Replacements, El Dorado Irrigation District, El Dorado County, California. Conducted field survey, prepared site forms, prepared cultural resources report for flume replacements and canal improvements.

Las Gallinas Valley Sanitary District Secondary Treatment Upgrade Project, Las Gallinas Valley Sanitary District, Marin County, California. Conducted field survey, prepared cultural resources report for water treatment plant improvements.

Auburn Riparian Vegetation Management Project, Auburn Area Recreation and Parks District, City of Auburn, California. Conducted field survey, prepared site forms, prepared cultural resources report for vegetation management recreation areas.

Arden Gateway Project, Fulcrum Property, Placer County, California. Prepared cultural resources report for commercial and residential development.

California Boulevard Roundabouts Project, Caltrans, City of Napa, California. Conducted extended phase I field survey, monitored geotechnical borings.

University Village Housing Project, City of Merced, Merced, California. Conducted field survey, prepared cultural resources report for housing development.

Yokohl Ranch Housing Development Project, The Yokohl Ranch Company LLC, Tulare County, California. Conducted field survey, performed site evaluation for large housing development.

Aera Energy Cultural Resources Inventory, Aera Energy LLC, Kern County, California. Conducted field survey, performed site evaluation, prepared cultural resources report for inventory existing cultural resources present for planning purposes.

Aera Energy Waterline Installation Project, Aera Energy LLC, Kern County, California. Conducted field survey, performed site evaluation, prepared cultural resources report for proposed waterline installation.

Granite Construction Clovis Site Development, Granite Development LLC, Clovis, California. Conducted field survey, prepared cultural resources report for business development.

Little Lake Line B Town Drain System Construction Project, Riverside County Flood Control and

Water Conservation District, Riverside County, California. Served as cultural and paleontological monitor.

Parking Structure Project, Academy of Our Lady of Peace, San Diego, California. Provided artifact analysis and report preparation.

Yorba Avenue Warehouse Project, Pacific Industrial Inc., Long Beach, California. Prepared a cultural resources letter report based on a records search and field survey for construction of a warehouse and office facility with parking lots and retention basins.

Proctor Valley Village 14 and Preserve Project, County of San Diego, California. Conducted field survey and site evaluation, prepared cultural resources report, and provided artifact analysis for a component of the Otay Ranch master-planned community.

Vista Canyon Ranch Sewer Line Project, Vista Canyon Ranch LLC, City of Santa Clarita, California. Provided field survey, site evaluation, and artifact analysis for a mixed-use residential and commercial development.

Rancho Cucamonga Northeastern Sphere Annexation Area, Sargeant Town Planning, Rancho Cucamonga, California. Conducted field survey and site evaluation of a potential annexation area.

Southern California Edison Bishop Service Center, Elements Architecture, Inc, City of Bishop, California. Conducted field survey and site evaluation, analyzed artifacts, and prepared report for construction of an electrical line service center facility.

Palm Avenue Distribution Center, IDS Real Estate Group, San Bernardino, California. Conducted field survey and site evaluation, and assisted with preparation of a cultural and paleontological resources monitoring report for warehouse/distribution center construction.

Newhall Homestead South Project, Newhall Land and Farming Company, Los Angeles County, California. Participated in intensive-level field survey of a 2,535 project site for a residential and commercial development.

Five Lagunas, Merlone Geier Management LLC, Laguna Hills, California. Completed a records survey for redevelopment of a mall property.

8777 Washington Boulevard Project, Guild GC (VCN LP), Culver City, California. Conducted a field survey and building evaluation for a commercial building remodel of a two-story, mixed-use building.

San Onofre to Pulgas Double Track, PGH Wong Engineering, San Diego County, California. Analyzed artifacts and prepared report for a railroad construction project.

Relevant Previous Experience

Archaeologist, Duke Cultural Resource Management, Rancho Santa Margarita, California. Participated in archaeological monitoring in Riverside County.

Co-owner and Principal Invesitgator, Archaeological Response Consultants. Prepared and wrote reports for archaeological projects.

Field Director/Crew Chief, Tetratech Inc., Pittsburgh, Pennsylvania. Supervised archaeological field crews (up to 25 people); managed archaeological projects for pipeline/energy projects; coordinated/contacted monitors, landowners, and land agents; and wrote site summaries. Supervised archaeological field crew of 20 on a multi-state gas pipeline survey (Pennsylvania Pipeline Project, Sunoco).

Field Supervisor, Public Archaeology Laboratory, Pawtucket, Rhode Island. Supervised archaeological field crews of up to 20 people. Assessed archaeological sensitivity and prepared archaeological technical reports.

Archaeologist, Public Archaeology Laboratory, Pawtucket, Rhode Island. Performed archaeological field work.

Rhode Island Marine Archaeology Project, Newport Rhode Island. Created an artifact analysis/tracking database.

Archaeological Field Supervisor, University of Massachusetts, Archaeological Services, Amherst, Massachusetts. Performed archaeological field work, mapped and laid in units, and supervised six-member crew. Projects included:

- Turner Falls Airport, Massachusetts—Field worker and lithic analyst for Paleo-Indian camp.
- Cohasset Roundhouse, Massachusetts—Monitored machine excavated nineteenth century railroad roundhouse.
- Tappan Zee Bridge Replacement, Hudson River, New York—Surveyed and mapped nineteenth century coal barge.

Technical Services Division Assistant, Massachusetts Historical Commission, Boston, Massachusetts. Reviewed projects for historic assessment and archaeological sensitivity. Processed archaeological reports and managed report collection. Processed archaeological site forms for State Inventory. Communicated with public and various agencies about Commission policies. General clerical work.

Lab Assistant, Rhode Island Marine Archaeology Project, Newport, Rhode Island. Analyzed and conserved artifacts.

Artifact Curations Assistant/Analyst, Massachusetts Historical Commission, Boston, Massachusetts. Identified and analyzed pre-contact and historic artifacts for the Southwest Corridor and Central Artery Massachusetts Department of Transportation projects in and around Boston. Installed museum exhibits at the Massachusetts Historical Commission Museum.

Vice President and Board Member, The James Cook Foundation, Newport, Rhode Island. Oversee annual meeting. Attend fundraising workshops given by Rhode Island Foundation Seminar. The foundation is dedicated to the preservation of James Cook's shipwrecks in Rhode Island.

Pre-contact Analyst, Historic Artifact Analyst, University of Massachusetts Archaeological Services, Amherst, Massachusetts. Analyzed primarily lithics, aboriginal ceramics, historic bottles and ceramics.

Volunteer, Hadley Historical Society, Hadley, Massachusetts. Identified and recorded Pre-contact artifacts.

Student, University of Massachusetts Archaeological Services, Amherst, Massachusetts. Cleaned historic and Pre-contact artifacts, data entry, photo labeling.

Student, University of Massachusetts Field School & Lab, Amherst, Massachusetts. Participated in Phase II excavation of W.E.B. DuBois boyhood homesite. Cleaned and identified historic artifacts, data entry, photo labeling, site map creation w/ AutoCad, ceramics research.

Volunteer, Rhode Island Marine Archaeology Project, Newport, Rhode Island. Summer/Fall 2003 – Present. As field worker, assisted with mapping and excavation of eighteenth century Revolutionary War British shipwrecks. Contributed to artifact identification and conservation in the lab.

Rhode Island Marine Archaeology Project. As instructor, taught techniques for mapping underwater archaeological sites.

Publications and Conference Presentations

Dotter, Kara, Sarah Corder, William Burns, and Adam Giacinto. 2017. *Historical Resources Technical Report for Siskiyou Hall, California State University, Chico Campus*. Dudek and Associates #10174, Encinitas, California.

Burns, William and Adam Giacinto. 2017. *Cultural Resources Inventory Report for the River Bluff Lower Terrace River, City of Ceres, California*. Dudek and Associates #10083, Encinitas, California.

Burns, William, Kara Dotter, and Adam Giacinto. 2017. *Cultural Resources Inventory Report for the Bellevue 7 Ranch Project, City of Santa Rosa, California*. Dudek and Associates #9931, Encinitas, California.

Corder, Sarah, Samantha Murray, William Burns, and Adam Giacinto. 2017. *Cultural Resources Study for the Castilleja School Project, City of Palo Alto, Santa Clara County, California*. Dudek and Associates #10056, Encinitas, California.

Giacinto, Adam and William Burns. 2017. *Cultural and Paleontological Resources Inventory for the McCown Minor Land Division Project, Placer County, California*. Dudek and Associates #9985, Encinitas, California.

Giacinto, Adam, William Burns, and Micah Hale. 2017. *Cultural Resources Inventory Report for the 2017 Flume Replacement Project, El Dorado County, California*. Dudek and Associates #8858, Encinitas, California.

Burns, William, Micah Hale, and Adam Giacinto. 2016. *Cultural Resources Inventory Report for the Peach Tree Solar Project, Yuba County, California*. Dudek and Associates #10037, Encinitas, California.

DeCarlo, Matthew, William Burns, and Adam Giacinto. 2016. *Cultural Resources Inventory Report for the Auburn Area Recreation and Parks District's Riparian Vegetation Management Project, Placer County*. Dudek and Associates #9798, Encinitas, California.

Burns, William. 2016. *Cultural Resources Report for the Proposed Las Gallinas Sanitary District - Secondary Treatment Upgrade Project, Marin County*. Dudek and Associates #9279, Encinitas, California.

Burns, William. 2016. *Cultural Resources Letter Report for the Arden Gateway Project, City of Sacramento, California*. Dudek and Associates #9805, Encinitas, California.

Giacinto, Adam, William Burns, and Angela Pham. 2016. *Cultural Resources Inventory and Extended Phase I Report for the Rohnert Park Water Tank Project, Sonoma County*. Dudek and Associates #9810, Encinitas, California.

Burns, William and Brad Comeau. 2015. *Negative Cultural Resources Report for the Yorba Avenue Commerce Center, Chino, California*. Dudek and Associates #9105, Encinitas, California.

Comeau, Brad, William Burns, and Micah Hale. 2015. *Cultural Resources Monitoring Report for the SCE Bishop Service Center Project, Inyo County, California*. Dudek and Associates #8392, Encinitas, California.

Comeau, Brad, William Burns, and Micah Hale. 2015. *Cultural Resources Monitoring Report for the Palm Avenue Commerce Center, San Bernardino, California*. Dudek and Associates #8830, Encinitas, California.

Comeau, Brad, William Burns, and Micah Hale. 2015. *Cultural Resources Monitoring Report for the LOSSAN San Onofre to Pulgas Double Track Project, San Diego County, California*. Dudek and Associates #6518, Encinitas, California.

Comeau, Brad, Scott Wolf, Adriane Dorrler, and William Burns. 2015. *Cultural Monitoring and Site Evaluation for the Academy of Our Lady of Peace Parking Lot, San Diego, California*. Dudek and Associates #8407, Encinitas, California.

Wolf, Scott, Brad Comeau, William Burns, and Micha Hale. 2015. *Cultural Resources Report for the Proctor Valley Village 14 & Preserve Project, San Diego County, California*. Dudek and Associates #8447, Encinitas, California.

Burns, W. and H. Hebster. 2014. *Intensive (Locational) Survey of Long Pond Wastewater Treatment Plant, Falmouth, Massachusetts*. Public Archaeology Laboratory Report, Pawtucket, Rhode Island.

Burns, W. and A. Leveillee. 2014. *Site Examination of New London Quartzite Quarry, Warwick, Rhode Island*. Public Archaeology Laboratory Report. Pawtucket, Rhode Island.

Burns, W. and A. Leveillee. 2014. *Intensive (Locational) Survey of Narragansett Longhouse Trail Improvements*. Charlestown, Rhode Island. Public Archaeology Laboratory Report, Pawtucket, Rhode Island.

Burns, W. 2010. "Getting Their Bearings: A Comparative Study of the First Seafarers in Australasia and the Aegean Sea." Master's thesis; University of York, United Kingdom.

Burns, W. 2010. "Quartz Clues: What Lithics Can Reveal About Migration Routes in Scandinavia." Paper presented at the Eighth Annual Mesolithic in Europe Conference, Santander, Spain.

Burns, W., A.E. Lewis, E.L. Bell, and T. Hollis, eds. 2009. "Bibliography of Archaeological Survey and Mitigation Reports: Massachusetts. 2009." 2006-2007 Annual Supplement. Massachusetts Historical Commission, Boston, Massachusetts.

Burns, W., R. Paynter, K. Lynch, B. Comeau, T. Ostrowski, R. Morales, M. Garber, E. Norris, and Q. Lewis. 2005. "The Burghardts of Great Barrington: The View from the W.E.B. DuBois Boyhood Homesite." Paper presented to the Society for Post-Medieval Archaeology and Society for Historical Archaeology Joint Meeting, York, United Kingdom.

Burns, W. 2004. "Newport's Infamous Slaver Wreck." Paper presented at the 44th Annual Northeastern Anthropological Association Conference, Dartmouth College, Hanover, New Hampshire.

Burns, W. 2004. "Investigations of Reputed Slave Ship, The Gem." Bachelor's thesis; University of Massachusetts, Amherst, United States.

Sarah Corder, MFA

Architectural Historian

Ms. Corder is an architectural historian with 13 years' professional experience in in all elements of cultural resources management, including project management, intensive-level field investigations, architectural history studies, and historical significance evaluations in consideration of the California Register of Historical Resources (CRHR), the Virginia Landmarks Register, and the National Register of Historic Places (NRHP), and local-level evaluation criteria. Ms. Corder has conducted numerous historical resource evaluations and developed detailed historic context statements for a multitude of property types and architectural styles, including private residential, commercial, industrial, educational, and agricultural properties. She has also provided expertise on numerous projects requiring conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

EDUCATION

Savannah College of Art and Design
MFA, Historic Preservation, 2004
Bridgewater College
BA, History, 2002

PROFESSIONAL AFFILIATIONS

California Preservation Foundation
National Trust for Historic Preservation
Los Angeles Conservancy
Society for Architectural Historians

Ms. Corder meets the Secretary of the Interior's Professional Qualification Standards for both Architectural History and History. She has experience preparing environmental compliance documentation in support of projects that fall under the California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA), and Sections 106 and 110 of the National Historic Preservation Act (NHPA).

Dudek Project Experience (2017)

Development

Birch Specific Plan 32-Unit Condo Project, City of Carson, Los Angeles County, California (in progress). Dudek was retained by the City of Carson to prepare a cultural resources report for a project that proposes to demolish approximately 6,200 square feet of existing residential buildings and roughly 5,850 square feet of pavement on the project site, and construct a 32-unit residential condominium community with on-grade parking, landscaping, and other associated improvements. The historical significance evaluation included three residential properties proposed for demolition. All properties were found not eligible under all designation criteria and integrity requirements. Ms. Corder's responsibilities for this project included the following: field survey, building permit research, background research, and co-authoring the final cultural resources report.

The 1431 El Camino Real Project, City of Burlingame, San Mateo County, California (in progress). The City of Burlingame proposes to demolish an existing four-unit (two-story) apartment building along with the detached five-car garage structure at the rear and construct a new six-unit (three-story) townhouse complex, totaling 3,858 square feet and a proposed height of 35 feet. The property at 1431-1433 El Camino Real was constructed in 1947 and required evaluation for historical significance. Further, because the property requires a Caltrans encroachment permit, a Caltrans-compliant Historical Resources Compliance Report (HRCR) was prepared. In addition to evaluating the building at 1431 El Camino, Dudek also had to address impacts to an NRHP-listed tree row within the project area. Ms. Corder's responsibilities on the project included the following: background research, building permit research, preparation of DPR forms for the evaluation of built resources, and co-authoring the final cultural resources report.

Duke Fontana Warehouse Project, City of Fontana, San Bernardino County, California (2017). Dudek was retained by the City of Fontana to conduct a cultural resources study for the proposed Duke Fontana Warehouse Project. The proposed project would include construction of a 288,215-square-foot (gross), one-story industrial/warehouse building on an approximately 13.45-acre site at the intersection of Santa Ana Avenue and Oleander Avenue. As part of the cultural resources study, Dudek evaluated 8 residential properties over 45 years old for historical significance. The resources were found not eligible under all designation criteria and integrity requirements. Ms. Corder's responsibilities for the project included the following: background research, preparation of DPR forms, and co-authoring the final cultural resources report.

Pacific Freeway Center Project, City of Fontana, San Bernardino County, California (2017). Dudek was retained by the City of Fontana to conduct a cultural resources study for the proposed Pacific Freeway Center Project. The project would include construction and operation of two "high cube" warehouse/distribution/logistics buildings with associated office spaces, surface parking, and loading areas. As part of the cultural resources study, Dudek evaluated the former Union Carbide Site for historical significance. The resource was found not eligible under all designation criteria and integrity requirements. Ms. Corder's responsibilities for the project included the following: background research, preparation of DPR forms for the evaluation of built resources, and co-authoring the final cultural resources report.

Village 3 HomeFed Otay Park Swap, Otay Ranch, Chula Vista, California (2017). Dudek was retained to prepare a Constraints Analysis for the development of approximately 100 acres of land south of the Otay River as an active recreation site. Ms. Corder's responsibilities for the project included the following: background research and assistance in the preparation of the historic context for the report.

Education

Castilleja School Project, City of Palo Alto, Santa Clara County, California (in progress). Dudek was retained by the City of Palo Alto to conduct a cultural resources study for the Castilleja Master Plan and Conditional Use Permit project. The study included a historical significance evaluation of the campus and related buildings and structures. Ms. Corder's responsibilities for the project included the following: architectural history field survey, background research, preparation of DPR forms for the evaluation of built resources, and co-authoring the cultural resources report.

Fullerton College Facilities Master Plan Program EIR, North Orange County Community College District, City of Fullerton, Orange County, California (in progress). The North Orange County Community College District (NOCCCD) is undertaking a comprehensive improvement and building program to make upgrades and repairs to existing buildings, as well as to construct new facilities to improve the safety and education experience of those attending Fullerton College. The College proposed to implement the Facilities Master Plan to more effectively meet the space needs of the projected on-campus enrollment through the next decade and beyond, while constructing and renovating facilities to meet the District's instructional needs. All buildings and structures on campus over 45 years old and/or or proposed for demolition/substantial alteration as part of the proposed project were photographed, researched, and evaluated in consideration of NRHP, CRHR, and local designation criteria and integrity requirements, and in consideration of potential impacts to historical resources under CEQA.

As a result of the significance evaluation, three historic districts and one individually eligible building were identified within the project area. The study also entailed conducting extensive archival and building development research, a records search, Native American coordination, detailed impacts assessment, and development of mitigation measures for project conformance with the Secretary of the Interior's Standards for Rehabilitation. Ms. Corder's responsibilities for the project included the following: architectural history field survey, background research, preparation of DPR forms for the evaluation of built resources, and co-authoring the cultural resources report.

CSU Chico College Park Demolition Project, Butte County, California (2017). Dudek was retained by California State University (CSU), Chico to complete a cultural resources study for a project that proposes demolition of 10 single-family residences near the CSU Chico campus in the City of Chico, Butte County, California. The study involved completion of a California Historical Information System (CHRIS) records search, outreach with the Native American Heritage Commission (NAHC) and local tribes/groups, a pedestrian survey of the project area for built-environment resources, and recordation and evaluation of 10 properties for historical significance. The significance evaluations included conducting archival and building development research for each property; outreach with local libraries, historical societies, and advocacy groups; and completion of a historic context. This study was conducted in accordance with Section 15064.5(a) (2)-(3) of the CEQA Guidelines, and the project site was evaluated in consideration of CRHR and City of Chico Historic Resources Inventory eligibility and integrity requirements. Furthermore, as required under California Public Resources Code (PRC) Sections 5024 and 5024.5, CSU Chico is required to provide notification and submit documentation to the State Historic Preservation Officer (SHPO) for any project having the potential to affect state-owned historical resources on or eligible for inclusion in the Master List. In accordance with PRC Section 5024(a), all properties were also evaluated in consideration of the NRHP and California Historical Landmark (CHL) criteria and integrity requirements. All 10 properties evaluated for historical significance appear to be not eligible for inclusion in the NRHP, CRHR, CHL, or local register (6Z) due to a lack of significant historical associations and compromised integrity. Ms. Corder's responsibilities for the project included the following: architectural history field survey, building permit research, background research, preparation of DPR forms for the evaluation of built resources, and co-authoring the cultural resources report.

Municipal

The Santa Monica City Yards Master Plan Project, City of Santa Monica, Los Angeles County, California (2017). The City of Santa Monica retained Dudek to complete a cultural resources study for the proposed City Yards Master Plan project site located at 2500 Michigan Avenue in the City of Santa Monica. The study involved evaluation of the entire City Yards site, including two murals and a set of concrete carvings for historical significance and integrity. As a result, the City Yards and its associated public artwork was found ineligible under all designation criteria. Ms. Corder's responsibilities for the project included the following: background research, preparation of DPR forms for the evaluation of built resources, and co-authoring the cultural resources report.

LADWP West Los Angeles District Yard Project, City of Los Angeles, Los Angeles County, California (2017). Dudek was retained by Los Angeles Department of Water and Power (LADWP) to complete a cultural resources study for a project that proposes demolition of five LADWP-owned administrative buildings and warehouses at the West Los Angeles District Headquarters located at 12300 West Nebraska Avenue. Dudek evaluated the yard for historical significance in consideration of NRHP, CRHR, and City of Los Angeles HCM criteria and integrity requirements. Ms. Corder's responsibilities for the project included the following: architectural history field survey and background research.

State of California

Judicial Council of California Historical Resource Evaluation Report for the Santa Monica Courthouse, City of Santa Monica, Los Angeles County, California (2017). Dudek was retained by the Judicial Council of California (JCC) to prepare an evaluation of the Santa Monica Courthouse building, located at 1725 Main Street in the City of Santa Monica, California. To comply with Public Resources Code Section 5024(b), the JCC must submit to the State Historic Preservation Officer (SHPO) an inventory of all structures over 50 years of age under the JCC's jurisdiction that are listed in or that may be eligible for inclusion in the National Register of Historic Places (NRHP), or registered or that may be eligible for registration as a California Historical Landmark (CHL). The Santa Monica Courthouse was found not eligible for designation under all applicable criteria. Ms. Corder's responsibilities for the project included the following: background research and co-authoring the final cultural resources report.

Judicial Council of California Historical Resource Evaluation Report for the Figueroa Division Courthouse, City of Santa Barbara, Santa Barbara County, California (2017). Dudek was retained by the Judicial Council of California (JCC) to prepare an evaluation of the Santa Monica Courthouse building, located at 118 E. Figueroa Street in the City of Santa Barbara, California. To comply with Public Resources Code Section 5024(b), the JCC must submit to the State Historic Preservation Officer (SHPO) an inventory of all structures over 50 years of age under the JCC's jurisdiction that are listed in or that may be eligible for inclusion in the National Register of Historic Places (NRHP), or registered or that may be eligible for registration as a California Historical Landmark (CHL). The Figueroa Division Courthouse was found not eligible for designation under all applicable criteria. Ms. Corder's responsibilities for the project included the following: background research and co-authoring of the final cultural resources report.

Department of General Services Historical Resource Evaluation for the Normal Street Department of Motor Vehicles Site at 3960 Normal Street, San Diego, California (2017). Dudek was retained by the State of California Department of General Services to complete a Historical Resources Technical Report for a project that proposes demolition and replacement of the Department of Motor Vehicles (DMV) building located at 3960 Normal Street in the City of San Diego. To comply with Public Resources Code Section 5024(b), DGS must submit to the State Historic Preservation Officer (SHPO) an inventory of all structures over 50 years of age under DGS's jurisdiction that are listed in or that may be eligible for inclusion in the National Register of Historic Places (NRHP), or that may be eligible for registration as a California Historical Landmark (CHL). The DMV was found not eligible. Ms. Corder's responsibilities for the project included background research for the historical resource technical report.

Transportation

Princeton Avenue Road Widening Project, City of Moorpark, Ventura County, California (in progress). Dudek was retained by Stantec and the City of Moorpark to prepare Caltrans-compliant cultural resource documentation for the Princeton Avenue Road Widening Project. The project includes approximately 0.75-miles of roadway widening and improvements, including sidewalks and bicycle lanes. Dudek prepared an ASR, HRER, and HPSR in support of this effort. Both properties were found ineligible under all designation criteria and integrity requirements. The reports are currently pending Caltrans District 7 approval. Ms. Corder's responsibilities for the project included background research for the required reports.

Historical Resources Assessment for the SFO Residential Sound Insulation Program, Cities of San Bruno and Millbrae, San Mateo County, California (2017). Dudek was retained by San Francisco International Airport (SFO) to evaluate 28 residential properties constructed 50 years ago or more within the cities of San Bruno and Millbrae, in San Mateo County, California. These properties are proposed to receive installation of sound insulation materials as part of SFO's Residential Sound Insulation Program. All 28 properties were recorded and evaluated on State of California Department of Parks and Recreation Series 523 Forms for historical significance in consideration of National Register of Historic Places (NRHP) designation criteria and integrity requirements. Ms. Corder's responsibilities for the project included the following: architectural history field survey, background research, preparation of DPR forms for the evaluation of built resources, and co-authoring the cultural resources report.

Other California Project Experience (2009-2014)

Crenshaw /LAX Transit Corridor Project, Los Angeles County, California (2011). Ms. Corder conducted the architectural history survey and participated in the evaluation of over 100 built environment resources that may be affected by the Los Angeles County Metropolitan Transportation Authority's (Metro's) proposed Crenshaw/LAX Transit Corridor Project. The project is approximately 8.5 miles in length and is located within the cities of Los Angeles and Inglewood, Los Angeles County, California. Ms. Corder was involved in both architectural history field surveys and completion of over 100 DPR forms for the evaluation of built environment resources. The project was subsequently approved by SHPO with no comments. Client: Terry Hayes Associates, LLC; Agency: Metro.

East Los Angeles College Satellite Campus Project, City of South Gate, Los Angeles County, California (2009). Ms. Corder conducted the architectural history survey and participated in the evaluation of built environment resources for a land development project located in Los Angeles County, California. Client: Terry A. Hayes Associates, LLC.

San Gabriel Trench Grade Separation Project (Phases I, II, and III); Cities of San Gabriel, Alhambra, and Rosemead, Los Angeles County, California (2008–2010, 2011-2014). Ms. Corder conducted the architectural history survey and participated in the evaluation of over 100 built environment resources that may be effected by the a proposed grade separation located within the cities of San Gabriel, Alhambra, and Rosemead. The proposed project would lower a 2.2-mile section of Union Pacific Railroad tracks in the immediate vicinity of the historic Mission San Gabriel Arcángel. Ms. Corder was involved in both architectural history field surveys and completion of over 100 DPR forms for the evaluation of built environment resources. Client: Terry A. Hayes Associates, LLC.

Wetlands Pocket Park Project, Los Angeles, California (2009): Ms. Corder conducted the architectural history survey and participated in the evaluation of built environment resources for the project that was located on the site of a former rail yard for the City of Los Angeles Yellow Line. Client: City of Los Angeles Department of Public Works.

Additional Work Experience (2004-2009)

Sabe Preservation Consulting (2004-2009). Ms. Corder owned and operated a historic preservation consulting business in the Commonwealth of Virginia from 2004-2009. The bulk of her consulting work was for private property owners seeking to complete tax credit projects on their historic properties. Tax credit services offered by the firm included compliance with the SOI Standards, on site construction management, and preparation of all required documentation for the tax credit programs on the state and national level. In addition to the tax credit work performed by her company, Ms. Corder also performed a feasibility study for the relocation of three historic buildings within the City of Harrisonburg in 2005. The remainder of the work performed by Ms. Corder was NRHP nomination preparation. From 2004-2009 Ms. Corder listed the following properties on the Virginia Landmarks Register and the National Register of Historic Places.

David and Catherine Driver Farm, Rockingham County, Virginia (2007). Ms. Corder prepared a NRHP nomination for the David and Catherine Driver Farm located in Rockingham County, Virginia. The property is an 823-acre Civil War era that included 7 historic buildings and 5 historic structures. Ms. Corder was responsible for all aspects of the nomination including the following: architectural history field survey, background research, preparation of all survey forms for the evaluation of built resources, coordination with SHPO, preparation of historic context, preparation of archival material packets as required by the NPS and SHPO, and preparation of the NRHP nomination form. The David and Catherine Driver Farm was listed on the NRHP and the Virginia Landmarks Register in 2007.

George Chrisman House, Rockingham County, Virginia (2006). Ms. Corder prepared NRHP nomination for the George Chrisman House located in Rockingham County, Virginia. The property is a late nineteenth century farm with a limestone main house with attached kitchen, ruins of the old mill, and a pump house. Ms. Corder was responsible for all aspects of the nomination including the following: architectural history field survey, background research, preparation of all survey forms for the evaluation of built resources, coordination with SHPO, preparation of historic context, preparation of archival material packets as required by the NPS and SHPO, and preparation of the NRHP nomination form. The George Chrisman House was listed on the NRHP and the Virginia Landmarks Register in 2006.

Old Town Historic District, City of Harrisonburg, Virginia (2008). Ms. Corder prepared a NRHP nomination for the Old Town Historic District located in Harrisonburg, Virginia. The late-nineteenth and early twentieth century residential district included 387 contributing buildings, 1 contributing structure and 62 non-contributing buildings. Ms. Corder was responsible for all aspects of the nomination including the following: architectural history field survey, background research for all properties, coordination with state and local stakeholders, public presentations, preparation of all survey forms, entry of all survey data into the Commonwealth of Virginia historic resources database, definition of historic district boundaries, coordination with SHPO, preparation of historic context, preparation of archival material packets as required by the NPS and SHPO, and preparation of the nomination form. The Old Town Historic District was listed on the NRHP and the Virginia Landmarks Register in 2008.

Ramsay Estate, Albemarle County, Virginia (2004). Ms. Corder prepared a NRHP nomination for the Ramsey Estate located in Albemarle County, Virginia. The property was an early twentieth-century farm with an elaborate architect designed main house and 15 contributing outbuildings. Ms. Corder was responsible for all aspects of the nomination including the following: architectural history field survey, background research, preparation of all survey forms for the evaluation of built resources, coordination with SHPO, preparation of historic context, preparation of archival material packets as required by the NPS and SHPO, and preparation of the NRHP nomination form. The Ramsey Estate was listed on the NRHP and the Virginia Landmarks Register in 2004.

Whitesel Brothers Building, City of Harrisonburg, Virginia (2004). Ms. Corder prepared a NRHP nomination for the Whitesel Brothers Building located in the City of Harrisonburg, Virginia. The building was an early twentieth century commercial building. Ms. Corder was responsible for all aspects of the nomination including the following: architectural history field survey, background research, preparation of all survey forms for the evaluation of built resources, coordination with SHPO, preparation of historic context, preparation of archival material packets as required by the NPS and SHPO, and preparation of the NRHP nomination form. The Whitesel Brothers Building was listed on the NRHP and the Virginia Landmarks Register in 2004.

Owens-Thomas House Museum, Savannah, Georgia (2005-2006). Ms. Corder completed a plaster conservation project at the Owens-Thomas House in Savannah, Georgia. Her project responsibilities included the following: conservation of deteriorated nineteenth century plaster and paint, management and training for the student intern program, preparation of project reports, education of staff and public, and management of all chemical and safety protocols.

Relevant Training

- Historic Districts: New Processes, SOI Standards for Districts, Infill Construction, Additions & ADU's, CPF, 2017
- Focus on Modernism: Design, Materials Conservation & Review, CPF, 2017
- Certified Historic Preservation Consulting Commonwealth of Virginia, 2004

Adam Giacinto, MA, RPA

Archaeologist

Adam Giacinto is an archaeologist with more than 12 years' experience preparing cultural resource reports, and managing archaeological survey, evaluation, and data recovery-level investigations. His research interests include prehistoric hunter-gatherer cultures and contemporary conceptions of heritage. His current research focuses on the social, historical, archaeological, and political mechanisms surrounding heritage values. He has gained practical experience in archaeological and ethnographic field methods while conducting research in the throughout California, Mexico, and Eastern Europe.

Mr. Giacinto brings additional specialized experience in cultural resources information processing gained while working at the South Coastal Information Center. He has worked as part of a nonprofit collaboration in designing and managing a large-scale, preservation-oriented, standardized database and conducting site and impact predictive Geographic Information Systems (GIS) analysis of the cultural resources landscape surrounding ancient Lake Cahuilla. He provides experience in ethnographic and applied anthropological methods gained in urban and rural settings, both in the United States and internationally.

EDUCATION

San Diego State University
MA, Anthropology, 2011

Santa Rosa Junior College
AA, Anthropology, 2004

Sonoma State University
BA, Anthropology/Linguistics, 2006

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists

Society for California Archaeology American Anthropological Association Institute of Archaeomythology

American Anthropological Association

Selected Projects

Napa Roundabouts Project, City of Napa, California. As Principal archaeological investigator, Mr. Giacinto completed Native American coordination, preperation of an ASR and HRER, review of historical and geoarchaeological documentation, and successfully developed, implemented, and reported upon an XPI Investigation, including preperation of a XPI Proposal and technical report. Mr. Giacinto managed fieldwork, which included survey, the use of mechanical geoprobes and hand excavation with the intent of identifying the potential for both prehistoric and historical-era resouces within the NRHP-eligible West Napa Historic District. A successful mitigation strategy was developed for the City of Napa and Caltrans, within federal, state and local regulatory contexts.

Water Tank No. 8 Project, City of Rohnert Park, Sonoma County, California. As Principal archaeological investigator, Mr. Giacinto coordinated a Northwest Information Center (NWIC) records search, Native American Heritage Commission (NAHC) and Native American correspondence, archaeological survey, and preparation of a technical report. Project involved extended phase I exploratory probing of identified resources and high-probability areas for unidentified resources, site recordation, a geomorphic analysis, and preperation fo a monitoring plan meeting both CEQA considerations and Section 106 compliance for USACE review. An appropriate mitigation strategy was developed and provided to the City of Ronert Park.

Bellevue Ranch 7 Project, City of Santa Rosa, Sonoma County, California. As principal investigator, Mr. Giacinto coordinated a Northwest Information Center (NWIC) records search, Native American Heritage Commission (NAHC) and Native American correspondence, archaeological and historic architectural survey, and preparation of a technical report.

Mr Giacinto prepared and reviewed management recommendations. Project involved evaluation of an 1920s era residential building, review of building records, and assessment for unidentified historic-era resources. All work and recommendations met both CEQA considerations and Section 106 compliance.

Kitchell Santa Rosa Project, Granite Construction, City of Santa Rosa, California. As Principal archaeological investigator, Mr. Giacinto coordinated a Northwestern Information Center (NWIC) records search, Native American Heritage Commission (NAHC) and Native American information outreach, and preparation of a technical memo. An appropriate mitigation strategy was developed meeting CEQA and local reuirements for this cultural inventory.

Clearwater Project, City of Rohnert Park, Sonoma County, California. As principal archaeological investigator, Mr. Giacinto coordinated a Northwest Information Center (NWIC) records search update and reviewed existiting mitigation for the City of Rohnert Park.

Caltrain Electrification Project, Cities of San Francisco, San Mateo, Palo Alto and San Jose, California. As Co-Principal Investigator, Mr. Giacinto supervises, implements, and reports upon cultural inventory and compliance efforts under Section 106 of the NHPA, Joint Power Board, Project MOA, CEQA, and local Guidelines for the San Francisco to San Jose section. General responsibilities include oversight of Native American monitors, built environment specialists and archaeologists, management of cultural monitoring implementation and site treatment, client reporting, meetings and report preperation. Implementation of mitigation included exploratory archaeological investigations at multiple NAHC-eligible resources.

San Pablo Broadband Project, City of San Pablo, California. As principal cultural investigator, Mr. Giacinto coordinated a Northwest Information Center (NWIC) records search, Native American Heritage Commission (NAHC) sacred lands file search, tribal outreach, and preparation of a constraints study, ARMR-style technical report and monitoring plan, and IS/MND under CEQA and Section 106 for the entire City of San Pablo area. Work included preperation of a regional sensitivity study for known and buried cultural resoures by applying a weigheted geologic, sois, geotechnical, slope, landscape, and previous technical study innformation. A mitigation strategy was prepared to meet City needs within in this area containing numerous sensitive NRHP/CRHR-listed archaeological (Nelson Mound sites) and built environment resources.

California High Speed Rail, Fresno, California. As Co-Principal Investigator, Mr. Giacinto supervised, implemented, and reported upon cultural inventory and compliance efforts under Section 106 of the NHPA, Federal Rail Authority, CEQA, and local Guidelines for Fresno to Bakersfield section. General responsibilities included day-to day scheduling oversight of Native American monitors, built environment specialists and archaeologists, management of cultural monitoring implementation and site treatment, client reporting, meetings and report preperation. Mr. Giacinto was the lead in multiple trainings.

New Hogan Reservoir Project, Calaveras County, California. As principal investigator, Mr. Giacinto coordinated a Central California Information Center (CCIC) records search, Native American Heritage Commission (NAHC), archaeological survey, and preparation of a constraints study with management recommendations for Calaveras County Water District to meet CEQA compliance.

Auburn Recycled Wastewater Treatment Plant Secondary Process Upgrade Improvement Project, City of Auburn, California. As principal investigator, Mr. Giacinto managed the survey, archival searches, tribal correspondence, and reported mangement recommendations for a cultural resources inventory. Considerations included compliance under CEQA and Section 106 of the NHPA.

Recycled Water Pipeline Project, City of Woodland, California. As principal investigator, Mr. Giacinto managed the survey, archival searches, tribal correspondence, and reported mangement recommendations for a cultural resources inventory. Considerations included compliance under CEQA and Section 106 of the NHPA.

Las Gallinas Treatment Plant Secondary Upgrade Improvement Project, Las Gallinas, Marin County, California. As principal investigator, Mr. Giacinto managed the survey, archival searches, tribal correspondence, and reported mangement recommendations for a cultural resources inventory and evaluation review completed for the Las Gallinas Valley Sanitary District. Considerations included compliance under CEQA and Section 106 of the NHPA.

Pure Water Plan Constraints Study and PEIR, City of San Diego, California. As Principal investigator and field director, Mr. Giacinto managed preperation of a constraints study for the Pure Water Project. Work involved a records search of over 100 mile linear miles of San Diego. Site record information from more than 1,236 cultural resources was processed, coded, and integrated within a geospatial sensitivity model to identy archaeological and built environment constraints throughout the proposed alignment. This information was integrated within a PEIR and is currently being used to assist with management planning through the project alignment. Maps were then generated using generalized grid units (1000 x 1000 meters in size) to provide a visual model of relative archaeological resource sensitivity while maintaining the appropriate level of confidentiality for public dissemination to assist in planning.

El Dorado Irrigation 2017 Flume Replacement Project, Riverton, El Dorado County, California. As Principal archaeological investigator, Mr. Giacinto coordinated a North Central Information Center (NCIC) records search, Native American Heritage Commission (NAHC) and Native American information outreach, archaeological survey, and preparation of a technical report for EID under CEQA regulatory context. An appropriate mitigation strategy was developed for this cultural inventory, including updates to the El Dorado Canal, Olgiby Grade, and additional historic-era sites.

El Dorado Irrigation District Emergency Tree Harvest, El Dorado, California. As Principal archaeological investigator, Mr. Giacinto coordinated a North Central Information Center (NCIC) records search, Native American Heritage Commission (NAHC) and Native American information outreach, archaeological survey, and preparation of a technical report for CalFire and EID under CEQA regulatory context. An appropriate mitigation strategy was developed for this cultural inventory, including updates to the El Dorado Canal.

Santa Margarita Hidden Ridge Project, Orange County, California. As principal investigator, Mr. Giacinto managed the survey, SCCIC archival searches, tribal correspondence, and reported mangement recommendations for a cultural resources inventory. The proposed interesected two NRHP-listed resources and a NRHP-listed archaeological district. Mr. Giacinto developed and managed testing efforts to approriately define significant deposits and prepared a monitoring plan. Considerations included compliance under CEQA and Section 106 of the NHPA, and project was successfully permitted.

South Orange County Water Authority Brine line Project, Orange County, California. As principal investigator, Mr. Giacinto managed an updated survey, archival searches, tribal correspondence, and reported mangement recommendations for a cultural resources inventory requiring Army Corps review for Section 106 compliance. Mr. Giacinto successfully re-deliniated NRHP-listed archaeological resource boundaries based on review of survey and archival data. Considerations included compliance under CEQA and Section 106 of the NHPA.

El Toro Recycled Water Project, Orange County, California. As principal investigator, Mr. Giacinto managed the survey, archival searches, tribal correspondence, and reported mangement recommendations for a cultural resources inventory. Considerations included compliance under CEQA and Section 106 of the NHPA.

Santa Ana Watershed Project Authority Reach 5 Project, Riverside County, California. As principal investigator, Mr. Giacinto managed provided recommendations to SAWP for a monitoring approach that would satisfy both State Water Boad and Pechanga tribe interests. Project included archaeological monitoring of areas along Tescal Canyon Road and met compliance under CEQA and Section 106 of the NHPA.

Carlsbad Desalination Third Addendum to EIR Biological Survey and Monitoring, Poseidon Water LLC, Carlsbad, California. As archaeological consultant, Mr. Giacinto conducted archaeological monitoring and consultation on an as-needed basis.

Lake Morena Dam Project, Lake Morena, City of San Diego, California. As Principal investigator, Mr. Giacinto managed a SCIC records search, NAHC and Native American correspondence, archaeological survey, agency correspondence, and preparation of a archaeological and built environment technical report work related to dam improvements.

Hanson El Monte Pond Restoration, Lakeside's River Park Conservancy, San Diego, California. As Principal investigator, Mr. Giacinto managed the field efforts, reporting, and agency interface for a cultural inventory. Resources were evaluated for significance under county guidelines, CEQA, and Section 106 of the NHPA. Worked with the Army Corps for submittal of documents to SHPO.

Hamilton Hospital Project, City of Novato, California. As principal investigator, Mr. Giacinto managed tribal and archaeological fieldwork and methodological reporting relating to the extended Phase I inventory geoprobe drilling and shovel test pit excavation. Considerations included compliance under CEQA and local regulations.

Laurel Ridge Project, City of Novato, Marin County, California. As third party cultural consultant, Mr. Giacinto reviewed technical report findings and recomendatiosn for compliance with CEQA and Section 106 compliance. Recomendations were made to ensure that all mitigation strategies were well grounded and defensible.

Private Pier Project, City of Tiburon, Marin County, California. As Principal archaeological investigator, Mr. Giacinto coordinated a Northwest Information Center (NWIC) records search, Native American Heritage Commission (NAHC) and Native American correspondence, archaeological survey, and preparation of a technical report. An appropriate mitigation strategy was developed and provided to the County of Marin for this negative cultural inventory.

Oakmont Senior Living Facility, City of Novato, Marin County, California. As Principal archaeological investigator, Mr. Giacinto coordinated a Northwest Information Center (NWIC) records search, Native American Heritage Commission (NAHC) and Native American correspondence, archaeological survey, and preparation of a technical report. An appropriate mitigation

UC Merced Student Housing Project, Merced County, California. As principal investigator, Mr. Giacinto coordinated a Central California Information Center (CCIC) records search, Native American Heritage Commission (NAHC) and Native American correspondence, archaeological and historic architectural survey, and preparation of a technical report. Mr. Giacinto prepared and reviewed management recommendations for CEQA considerations and Section 106 compliance.

New Hogan Reservoir Project, Calaveras County, California. As principal investigator, Mr. Giacinto coordinated a Central California Information Center (CCIC) records search, Native American Heritage Commission (NAHC), archaeological survey, and preparation of a constraints study with management recommendations for Calaveras County Water District to meet CEQA compliance.

Royal Gorge Trails Project, Donner Summit, Donner Land Trust, Placer County, California. As Principal archaeological investigator, Mr. Giacinto coordinated and completed a North Central Center (NCIC) records search, Native American Heritage Commission (NAHC) and Native American correspondence, archaeological survey, and preparation of a technical report. An appropriate mitigation strategy meeting federal, state, and local standards was developed and provided to the client for this negative cultural inventory.

Emergency Helipad Project, Tahoe-Truckee Airport District, South Lake Tahoe, Placer County, California. As Principal archaeological investigator, Mr. Giacinto coordinated a North Central Center (NCIC) records search, Native American Heritage Commission (NAHC) and Native American correspondence, archaeological survey, and preparation of a technical report. An appropriate mitigation strategy meeting federal, state, and local standards was developed and provided to the client for this negative cultural inventory.

MCWRA Interlake Spillway Project, Monterey and San Luis Obispo Counties, California. As Co-Principal archaeological investigator, Mr. Giacinto provided oversight and management of Inventory and Evalutation. Project involved survey of Lake San Antonio and outflow at Lake Nacimiento, as well as evaluation of the Lake San Antonio historic-era dam.

South Lake Solar Project, Fresno County, California. As principal investigator, Mr. Giacinto coordinated a San Joaquin Valley Information Center (SJVIC) records search, Native American Heritage Commission (NAHC), review of existing information, and preparation of a Critical Issues Analysis.

Donner Trail Elementary School Project, Truckee, Placer and Nevada County, California. As archaeologist, Mr. Giacinto coordinated a North Central Information Center (NCIC) records search, Native American Heritage Commission (NAHC) and Native American correspondence, archaeological survey, and preparation of a technical report. An appropriate mitigation strategy meeting state and local standards was developed and provided to the client for this negative cultural inventory.

Tahoe Lake Elementary School Project, South Lake Tahoe, California. As archaeological investigator, Mr. Giacinto assisted with report preparation and project coordination, as well as prepared geoarchaeological assessment for ACOE or project area.

Roberts' Ranch Project, Vacaville, California. As Principal archaeological investigator, Mr. Giacinto coordinated a Northwest Information Center (NWIC) records search, Native American Heritage Commission (NAHC) and Native American information outreach, archaeological and historic architectural survey, and preparation of a technical report under CEQA regulatory context. An appropriate mitigation strategy was developed for this cultural inventory.

Collins Drive Project, City of Auburn, California. As Principal archaeological investigator, Mr. Giacinto coordinated a North Central Information Center (NCIC) records search, Native American Heritage Commission (NAHC) and Native American information outreach, archaeological survey, and preparation of a technical memo . An appropriate mitigation strategy was developed meeting CEQA and local reuirements for this cultural inventory.

Dorsey Marketplace Project, City of Grass Valley, California. As Principal archaeological investigator, Mr. Giacinto coordinated a North Central Information Center (NCIC) records search, Native American Heritage Commission (NAHC) and Native American information outreach, archaeological survey, and preparation of a technical report. An appropriate mitigation strategy was developed meeting CEQA and local reuirements for this cultural inventory, including recommendations relating to historicl mining features.

Penn Valley Project, SimonCre, County of Nevada, California. As Principal archaeological investigator, Mr. Giacinto coordinated a North Central Information Center (NCIC) records search, Native American Heritage Commission (NAHC) and Native American information outreach, archaeological survey, and preparation of a technical memo. An appropriate mitigation strategy was developed meeting Army Corps of Engineers, CEQA and local reuirements for this cultural inventory update.

Byron Airport Development Program, Contra Costa, California. As Principal archaeological investigator, Mr. Giacinto coordinated a Northwest Information Center (NWIC) records search, Native American Heritage Commission (NAHC) and Native American information outreach, archaeological survey, and preparation of a technical report. An appropriate mitigation strategy was developed for this cultural inventory.

Combie Road Corridor Improvement Project, Auburn, California. As Principal archaeological investigator, Mr. Giacinto coordinated a North Central Information Center (NCIC) records search, Native American Heritage Commission (NAHC) and Native American information outreach, archaeological and historic architectural survey, DPR 523 building forms, and preparation of a technical report under CEQA regulatory context. An appropriate mitigation strategy was developed for this cultural inventory.

Dodge Flats Power Project, Pyramid Lake, Nevada. As principal investigator, Mr. Giacinto coordinated a the Nevada Cultural Resource Information System (NVCRIS) records search, prepared a study of prehistoric and historical-era constraints, oversaw drone photography, predictive analyses (slope, aspect, drainage, eleveation, geomorphic), archaeologial survey sampling, and prepareda full report with appropriate mitigation.

Fish Springs Solar Project, Pyramid Lake, Nevada. As principal investigator, Mr. Giacinto coducted a NVCRIS records search and prepared a critical issues analysis for cultural resources.

Lassen Substation Project, Mt Shasta., California. As Principal archaeological investigator, Mr. Giacinto coordinated and conducted a review of the archaeological and built-enviornment technical study and related sections of the Proponent's Environmental Assessment on behalf of the CPUC.

Meadowrock Vinyard Project, Napa, California. As Principal archaeological investigator, Mr. Giacinto coordinated a Northwest Information Center (NWIC) records search, Native American Heritage Commission (NAHC) and Native American information outreach, archaeological and historic architectural survey, and preparation of a technical report under CEQA regulatory context. An appropriate mitigation strategy was developed for this cultural inventory

Highway 101 Overcrossing Project Offsite Staging Area Project, City of Palo Alto, California. As principal investigator, Mr. Giacinto reviewed existing Historic Property Survey Repoorts and Archaeological Survey Reports; then prepared an addendum study to meet CEQA and Caltrans regulations and styles. He coordinated a records search, NAHC and Native American consultation, archaeological survey, and preparation of the technical report.

Park Boulevard Environmental Impact Report (EIR), City of Palo Alto, California. As Principal archaeological investigator, Mr. Giacinto coordinated a Northwest Information Center (NWIC) records search, Native American Heritage Commission (NAHC) and Native American consultation, archaeological survey, and preparation of a technical report and EIR section. An appropriate mitigation strategy was developed and provided to the City of Palo Alto for this negative cultural inventory.

Vacaville Center Campus Project, Solano Community College District, City of Vacaville, California. As principal archaeological investigator, Mr. Giacinto coordinated a Northwest Information Center (NWIC) records search, NAHC and Native American communication, archaeological survey, and preparation of a technical report. Recommendations were framed in compliance with CEQA regulations and submitted to the lead agency.

Makani Power Wind Turbine Pilot Program, Alameda, California. As principal investigator, Mr. Giacinto coordinated a NWIC records search, NAHC and Native American consultation, archaeological survey, and preparation of a negative technical memo a for this potential wind farm. The mitigation strategy did not require additional archaeological monitoring or other work based on the lack of archaeological sites, and the low potential for encountering unrecorded subsurface cultural resources. Recommendations were submitted as a categorical exemption to the reviewing agency.

Maidu Bike Path and Park Projects, City of Auburn, California. As principal investigator, Mr. Giacinto managed the survey, archival searches, tribal correspondence, and reported mangement recommendations for a cultural resources inventory. Considerations included compliance under CEQA and Section 106 of the NHPA.

Auburn Recreation District Operations and Development Project, City of Auburn, California. As Principal archaeological investigator, Mr. Giacinto coordinated a North Central Information Center (NCIC) records search, Native American Heritage Commission (NAHC) and Native American information outreach, archaeological survey, and preparation of a technical report. An appropriate mitigation strategy was developed meeting Bureau of Reclamation, CEQA, and local requirements for this cultural inventory.

Auburn Recreation District Creek Vegetation Management Project, City of Auburn, California. As principal archaeological investigator, Mr. Giacinto coordinated a North Central Information Center (NCIC) records search, Native American Heritage Commission (NAHC) and Native American information outreach, archaeological survey, and preparation of a technical report. Two new archaeological sites were recorded. An appropriate mitigation strategy was developed meeting CEQA, US Army Corps Section 106, and local requirements for this cultural inventory.

Steephollow Creek and Bear River Restoration, Nevada County, California. As Principal investigator, Mr. Giacinto assisted with management of field efforts and preperation of a technical report for a cultural inventory. Resources were evaluated for significance under CEQA, and Section 106 of the NHPA.

Yokohl Ranch Development Project, The Yokohl Ranch Company, LLC, Tulare County, California. As co-principal investigator and field director, Mr. Giacinto managed 15 archaeologists in conducting significance evaluation of 118 historical and prehistoric cultural resources throughout the 12,000 acre Yokohl Valley area. Operated as tribal interface, and facilitated the respectul handling and reburial of sensitive cultural material with the tribes, applicant, and NAHC.

Yokohl Ranch Cultural Resources, The Yokohl Ranch Company, LLC, Tulare, California. As Principal investigator and field director, Mr. Giacinto managed 15 archaeologists in conducting 1,900 acres of survey throughout the Yokohl Valley.

Other Pertinent Experience

Mr. Giacinto was an active participant of Fort Ross Historic State Park Living History Day, 1995-2000. During these annual events, visitors would be educated in local Russian and Mexican-era history and prehistory (Aleutian and Kashia Pomo) of the park, and the surrounding region. In addition, Mr. Giacinto has identified and updated numerous archaeological sites throughout the northern Sonoma County coast with the intent of ensuring ongoing preservation and stewardship. The most recent of these was in June, 2017 where prehistoric Kashia Pomo rock art was re-located and DPR forms updated in the Still Water Cove

Additional Experience

Development

1836 Columbia Street Project, Parikh Properties, City of San Diego, California. As Co-Principal investigator, Mr. Giacinto coordinated a SCIC records search, NAHC, archaeological survey, and preparation of a negative technical report for this small residential development. The mitigation strategy did not require additional archaeological monitoring or other work based on the lack of archaeological sites, and the low potential for encountering unrecorded subsurface cultural resources. Recommendations were submitted to the City of San Diego.

Canergy - Rutherford Road Development Project, Ericsson-Grant, Inc., El Centro, California. As Principal investigator, Mr. Giacinto coordinated records searches, Native American contact, map preparation and fieldwork.

Oro Verde Development Project, Wohlford Land Co., LLC, Valley Center, California. As Principal investigator, Mr. Giacinto coordinated a SCIC records search, NAHC and Native American consultation, archaeological survey, and preparation of a negative technical letter report for this small residential development.

The mitigation strategy did not require additional archaeological monitoring or other work based on the lack of archaeological sites, and the low potential for encountering unrecorded subsurface cultural resources. Recommendations were submitted to the County of San Diego.

Fifth Avenue Development Cultural Inventory, E2 ManageTech, Inc., Chula Vista, California. As Principal investigator, Mr. Giacinto coordinated the preparation of a paleontological, archaeological, and historic resource inventory for a proposed residential project. Responsibilities included a SCIC records search, San Diego Natural History Museum (SDNHM) records search, archival research, agency and client communication, GIS, and compiling the technical report and appendices. Results were submitted as a technical report s to the City of Chula Vista.

Normal Street Evaluations, Darco Engineering, Inc., San Diego, California. As Principal investigator, Mr. Giacinto managed the preparation of a historic resource evaluation for a number of buildings located in the community of University Heights. Responsibilities included an SCIC records search, agency and client communication, archival research, GIS, and compiling the technical report and appendices. Results were submitted as a technical report and associated appendices to the City of San Diego.

Mapleton Park Centre Site Analysis, Kaiser Foundation Health Plan, Inc., Murrieta, California. As Principal archaeological consultant, Mr. Giacinto prepared a project constraints study for Kaiser Permanente, within the County of Riverside.

New Kaiser Permanente Medical Center EIR, Kaiser Foundation Health Plan, Inc., San Diego, California. As field director, Mr. Giacinto conducted a survey of the proposed medical center and reported negative findings to the City of San Diego.

St. John Garabed Church Environmental Services, St. John Garabed Armenian Apostolic Church Trust, San Diego, California. As field director and co-principal investigator, Mr. Giacinto conducted a survey of the proposed church facilities and reported findings to the City of San Diego. Additional responsibilities included preparation of the cultural and paleontological sections for the project EIR.

PMC Quarry Creek Project Phase II Cultural Evaluation, McMillin Land Development, Carlsbad, California. As field director, Mr. Giacinto managed and conducted archaeological testing, data analysis, report writing and mapping of existing cultural resources within the 60-acre Quarry Creek Project study area.

University Office and Medical Park Project Cultural Resource Study Survey, U.S. Army Corps of Engineers, San Marcos, California. As field director, Mr. Giacinto managed a team of archaeologists in conducting survey of the 49.5-acre study area in a general inventory of potentially impacted cultural resources and prepared maps and a report for the presentation of this information.

Education

Mission Beach Elementary School EIR, McKellar McGowan, San Diego, California. As principal archaeological investigator, Mr. Giacinto coordinated a Southern California Information Center (SCIC) records search, NAHC and Native American consultation, archaeological survey, and preparation of a technical report. The mitigation strategy did not require archaeological monitoring or other work based on the lack of archaeological sites, and the low potential for encountering unrecorded subsurface cultural resources. Recommendations were submitted to the City of San Diego.

San Diego State University (SDSU) West Campus Housing EIR/Tech Studies, Gatzke, Dillon and Balance, San Diego, California. As principal archaeological investigator, Mr. Giacinto coordinated a SCIC records search, NAHC and Native American consultation, archaeological survey, and preparation of a technical report and EIR section. An appropriate mitigation strategy was developed and provided to SDSU for this negative cultural inventory.

Orange Coast College Initial Study (IS), Coast Community College District, Orange, California. As principal archaeological investigator, Mr. Giacinto coordinated records search, NAHC and Native American consultation, archaeological survey, preparation of a technical report, and provided management and compliance recommendations relating to cultural resources on three Orange County College campuses.

Energy

McCoy Solar Energy Project, Blythe, California. As Principal Investigator, Mr. Giacinto supervised, implemented, and reported upon compliance efforts under Section 106 of the NHPA, BLM Guidelines, CEQA, and County of Riverside Guidelines. General responsibilities included day-to day scheduling oversight of Native American monitors and archaeologists, tribal interface, management of cultural monitoring implementation, and agency reporting. Worked with the Dudek Compliance team to provide cultural summaries for 14 variance requests. Reporting included preperation and submittal of daily cultural resource summaries to interested tribal parties and the BLM, monthly summaries of cultural compliance status and treatment of unanticipated finds, bi-weekly BLM-McCoy Solar, meetings and a montitoring summary report. Mr. Giacinto was the lead in two formal trainings with monitors and counsel members from the Colorado River Indian Tribes regarding federal and state regulations relating to human remains, County and BLM guiding documents, identification of cultural material, and the multiple understandings of "cultural resources".

Blythe Solar Power Project, Blythe, California. As Principal Investigator, Mr. Giacinto supervised, implemented, and reported upon cultural compliace and construction monitoring efforts under Section 106 of the NHPA, BLM Guidelines, California Energy Commission Guidelines, CEQA, and County of Riverside Guidelines. General responsibilities included day-to day scheduling oversight of Native American monitors and archaeologists, tribal interface, management of cultural monitoring implementation, and agency reporting to both the BLM and Energy Commission. Reporting included preperation and submittal of daily cultural resource summaries to interested tribal parties, Energy Commission, and the BLM, monthly summaries of cultural compliance status and treatment of unanticipated finds, bi-weekly BLM-McCoy Solar, meetings and a montitoring summary report. Mr. Giacinto was the lead in multiple trainings.

BayWa Granger Solar Site Survey, RBF Consulting, Valley Center, California. As Principal Investigator, Mr. Giacinto managed the inventory and prepared management recommendations for a proposed solar farm in Valley Center, California. A relationship of open dialogue between Mr. Giacinto and the client allowed for the project design to avoid significant direct and indirect impacts to cultural resources the proper the development of compliant mitigation and informed project design. Results were submitted to the County of San Diego Department of Planning and Landuse.

Valley Center Solar Site Survey, RBF Consulting, Valley Center, California. As Principal Investigator, Mr. Giacinto managed the inventory and prepared management recommendations for a proposed solar farm in Valley Center, California. A relationship of open dialogue between Mr. Giacinto and the client allowed for the project design to avoid significant direct and indirect impacts to cultural resources the proper the development of compliant mitigation and informed project design. Results were submitted to the County of San Diego Department of Planning and Landuse.

Data Collection for the Tierra Del Sol Solar Farm Project, Tierra Del Sol Solar Farm LLC, Tierra Del Sol, California. As field director, Mr. Giacinto managed a crew of 8 archaeologists in conducting the survey, surface mapping, surface collection, and excavation of 13 prehistoric and historical period sites throughout the McCain Valley. Mr Giacinto prepared a invenetory and evaluation report for this project, completed to County of San Diego Standards.

Rugged Solar Farm Project, Rugged Solar LLC, Boulevard, California. As principal investigator and field director, Mr. Giacinto managed a crew of 12 archaeologists in conducting the survey, surface mapping, surface collection and excavation of 42 prehistoric and historical period sites throughout the McCain Valley. Mr Giacinto prepared an inventory and evaluation report and EIR section for this project, completed to County of San Diego Standards

Wind Energy Project, Confidential Client, Riverside, California. As principal cultural investigator, Mr. Giacinto prepared the cultural scope and schedule, coordinated the records search, NAHC and Native American consultation, archaeological survey, and preparation of a technical report for the County of Riverside that provided management and compliance recommendations relating to identified cultural resources. Additional responsibilities included coordination of paleontological and Native American monitor subconsultants.

Gas Line for Poway Pump Station, City of Poway, San Diego County California. As principal investigator, Mr. Giacinto conducted an inventory, coordinated survey, and provided amangement recommendations in technical report.

Sol Orchard Solar Farm, RBF Consulting, Ramona, California. As Principal Investigator, Mr. Giacinto coordinated archaeological and Native American monitoring and prepared management recommendations for a proposed solar farm in Ramona, California. All impacts to significant cultural resources in the vicinity were avoided. Results were submitted to the County of San Diego.

Solar Farm Cultural Resources Services, Confidential Client, San Diego, California. As project director, Mr. Giacinto managed a crew of 8 archaeologists in conducting the survey, surface mapping, surface collection, and excavation of 13 prehistoric and historical period sites throughout the McCain Valley.

As-Needed Environmental Analysis for Solar Project Road Access, Confidential Client, San Diego, California. As field director, Mr. Giacinto managed a crew of 12 archaeologists in conducting the survey, surface mapping, surface collection and excavation of 42 prehistoric and historical period sites throughout the McCain Valley.

East County Substation EIR/Environmental Impact Statement (EIS), California Public Utilities Commission (CPUC), San Diego County, California. As field archaeologist, Mr. Giacinto worked as part of a team to survey the possible impacts to exiting and newly recorded cultural resources.

Class III Cultural Resources Inventory for Meteorological Masts 1 and 4 and Access Roads, Iberdrola Renewables, Kern County, California. As field director, Mr. Giacinto managed a team of archaeologists in conducting surveys of the study area in a general inventory of potentially impacted cultural resources.

Wood to Steel Pole Conversion Survey, San Diego Gas and Electric (SDG&E), San Diego County, California. As crew chief, Mr. Giacinto managed a team of archaeologists in conducting a survey of Circuit 75 in a general inventory of potentially impacted cultural resources.

Sunrise Powerlink Project Monitoring, SDG&E, Imperial and San Diego Counties, California. As a field director, Mr. Giacinto assisted in managing an archaeological field crew, aided in data collection, and conducted monitoring by facilitating planned mitigation strategies of construction and pre-construction activities associated with a 500-kilovolt (kV) transmission line, access roads, and work areas.

Cal Valley Solar Ranch-Switchyard Site No. 3 Archaeological Testing, Ecology & Environment Inc., San Luis Obispo County, California. As part of a team of archaeologists, conducted excavations and general testing of a middle prehistoric site.

Wood to Steel Pole Conversion, SDG&E, Cleveland National Forest (CNF), San Diego County, California. As crew chief, Mr. Giacinto managed a team of archaeologists in conducting a survey of Circuit 440 in a general inventory of potentially impacted cultural resources.

Devers to Palo Verde 2 (DPV2) Colorado River Substation Project Monitoring, Southern California Edison (SCE), Blythe, California. As project archaeologist, Mr. Giacinto monitored the geotechnical testing of soils along access road leading into Colorado River Substation from the west.

Sunrise Powerlink Pole Fielding and Environmental Monitoring, SDG&E, Imperial and San Diego Counties, California. As the archaeological representative, Mr. Giacinto worked with SDG&E-contracted engineers, surveyors, and biologists to assess proposed work areas, access roads, and structure locations for possible impacts upon existing cultural resources.

Wood to Steel Pole Conversion Pole Fielding, SDG&E and CNF, San Diego County, California. As the archaeological representative, Mr. Giacinto worked with SDGE-contracted engineers, surveyors, and biologists to assess proposed pole transmission pole locations for possible impacts upon existing cultural resources.

Wood to Steel Pole Conversion, SDG&E and CNF, San Diego County, California. As field archaeologist, Mr. Giacinto worked as part of a team to survey segments of Circuit 449, Circuit 78, TL 625, and TL 629 for possible impacts to existing cultural resources.

Guy Pole and Stub Pole Removal Monitoring, SDG&E, Carlsbad, California. As archaeological representative, Mr. Giacinto monitored activities associated with the removal of existing unused energy transmission infrastructure in an area near recorded cultural resources of noted significance.

DPV2 500 kV Transmission Line Survey, SCE, Riverside County, California. As field archaeologist, Mr. Giacinto worked as part of a team to survey more than 45 miles of linear proposed project area. Conducted an intensive inventory of prehistoric and historical period cultural resources from Desert Center to Thousand Palms.

DPV2 Colorado Switchyard Survey, SCE, Riverside County, California. As project archaeologist, Mr. Giacinto prepared the site records gathered through a pre-field records search and created project area maps in GIS illustrating the location and type of preexisting cultural resources prior field survey for a fiber-optic ground wire project for DPV2 Colorado switchyard in Blythe.

Pole Replacement Projects Surveying, SCE, Orange and Riverside Counties, California. As project archaeologist, Mr. Giacinto prepared the site records gathered through a pre-field records search and created project area maps in GIS illustrating the location and type of preexisting cultural resources prior to fieldwork for the deteriorated pole project within the CNF, and deteriorated pole and pole replacement on private property.

Sunrise Powerlink Environmentally Superior Southern Alternative Survey, SDG&E, San Diego and Imperial Counties, California. As project archaeologist, Mr. Giacinto assisted in preparing the site records gathered through a pre-field records search and digitized the boundaries if archaeological sites in GIS illustrating the location and type of preexisting cultural resources, and a records search of existing site data for alternative route.

Military

Cultural Resources Inventory, March Joint Powers Authority, Riverside County, California. As Principal investigator, Mr. Giacinto managed the field efforts, reporting, and facilitated tribal consultation for cultural inventory. The report included prepration of a cultural context for WW-I and WW-II era history o fthe air fields and camp in the vicinity. Resource considerations were compliant with CEQA and Section 106 of the NHPA.

Utility Corridor Survey at Edwards Air Force Base, U.S. Air Force, California. As Archaeologist, Mr. Giacinto guided the design and preperatio of digital field forms to assisst in the recordation of archaeological resources at archaeological sites throughout the EAFB, including the Pancho Barnes site.

Infill Survey Project at Edwards Air Force Base, U.S. Air Force, California. As Field Director, Mr. Giacinto managed a team of five archaeologists in conducting a general pedestrian inventory of cultural resources within a 7,650-acre study area

Desert Warfare Training Facility Cultural Resources Inventory Project, U.S. Navy Southwest, Imperial County, California. As field archaeologist, Mr. Giacinto worked as part of a team to conduct an intensive inventory of prehistoric and historical period cultural resources in selected areas within the Chocolate Mountains Gunnery Range in Niland.

Morgan/Bircham 55 to 12 kV Project Survey, U.S. Navy-Naval Air Weapons Station (NAWS)-China Lake, Inyo County, California. As project archaeologist, Mr. Giacinto prepared the site records gathered through a pre-field records search and created project area maps in GIS illustrating the location and type of preexisting cultural resources prior to field survey at NAWS China Lake.

Resource Management

Pure Water Project Constraints Study and PEIR, City of San Diego, California. As Principal investigator and field director, Mr. Giacinto managed preperation of a constraints study for the Pure Water Project. Work involved a records search of over 100 mile linear miles of San Diego. Site record information from more than 1,236 cultural resources was processed, coded, and integrated within a geospatial sensitivity model to identy archaeological and built environment constraints throughout the proposed alignment. This information was integrated within a PEIR and is currently being used to assist with management planning through the project alignment. Maps were then generated using generalized grid units (1000 x 1000 meters in size) to provide a visual model of relative archaeological resource sensitivity while maintaining the appropriate level of confidentiality for public dissemination to assist in planning.

Lake Morena Dam Project, Lake Morena, City of San Diego, California. As Principal investigator, Mr. Giacinto managed a SCIC records search, NAHC and Native American correspondence, archaeological survey, agency correspondence, and preparation of a archaeological and built environment technical report work related to dam improvements.

Hanson El Monte Pond Restoration, Lakeside's River Park Conservancy, San Diego, California. As Principal investigator, Mr. Giacinto managed the field efforts, reporting, and agency interface for a cultural inventory. Resources were evaluated for significance under county guidelines, CEQA, and Section 106 of the NHPA. Worked with the Army Corps for submittal of documents to SHPO.

Peter's Canyon Regional Park CEQA Study, Orange County Fire Authority, Orange, California. As principal investigator, Mr. Giacinto conducted a cultural resources inventory of all cultural resources within Peters Canyon planned fuel reduction areas. Mr. Giacinto coordinated a SCIC records search, NAHC and Native American consultation, archaeological survey, and preparation of a technical report. Recommendations were provided to agency personnel to assist in mitigating any possible adverse effects to cultural resources in the project vicinity.

Lake Cahuilla Cultural Resources Management Plan, ASM PARC, Riverside County, California. As project archaeologist and lead analyst, Mr. Giacinto developed a standardized database associated with ancient Lake Cahuilla and the surrounding archaeological and ecological landscape. Performed GIS data integration and predictive analysis, data entry of site record information, and completed multi-day, multi-person record search covering 17 USGS quadrangle in Riverside County. The project was finalized with the prepreation of a management document submitted to the the Friends of the San Jacinto Mountains with the intent of identifying known and potential areas for preservation.

Third Party Review and Monitoring

Ocotillo Wind Energy Facility Third Party Compliance Monitoring, Bureau of Land Management (BLM), Imperial County, California. As third party observer, Mr. Giacinto collaborated with the BLM in maintaining cultural compliance with federal environmental policies. In addition, processed archaeological and Native American comments for BLM attention.

Rio Mesa Solar Electric Generating Facility CEQA Studies, BrightSource Energy, Inc., Riverside, California. As third party reviewer, Mr. Giacinto collaborated with the BLM, the California Energy Commission, and Brightsource to review URS Corporation's cultural report content, quality, and environmental compliance.

Tribal

South Palm Canyon West Fork Flood Emergency Work, Agua Caliente Band of Cahuilla Indians, Palm Springs, California. As principal investigator, Mr. Giacinto worked with the Agua Caliente Band of Cahuilla Indians Tribal Historic Preservation Office to conduct archaeological monitoring on tribal lands of emergency repairs within Andreas Canyon National Register of Historic Places listed district. A monitoring report with a summary of findings and implemented mitigation activities, daily monitoring logs and photos, and confidential figures was provided to the tribe.

South Palm Canyon Improvements, Agua Caliente Band of Cahuilla Indians, Palm Springs, California. As principal investigator, Mr. Giacinto worked with the Agua Caliente Band of Cahuilla Indians Tribal Historic Preservation Office to conduct archaeological monitoring on tribal lands of facility improvements within Andreas Canyon National Register of Historic Places listed district. A monitoring report with a summary of findings and implemented mitigation activities, daily monitoring logs and photos, and confidential figures was provided to the tribe.

Shu'luuk Wind Project Cultural Resource Study Survey, Campo Environmental Protection Agency and Invenergy LLC, Campo Indian Reservation, California. As field director, Mr. Giacinto managed two teams of archaeologists, consisting of seven total practitioners, in conducting a survey of the 2,400-acre study area in a general inventory of potentially impacted cultural resources. Worked with Campo Environmental Protection Agency, of the Campo Kumeyaay Nation, in forming management objectives and integrating six Native American Monitors into daily survey activities.

Water/Wastewater

El Toro Recycled Water Project, Orange County, California. As principal investigator, Mr. Giacinto managed the survey, archival searches, tribal correspondence, and reported mangement recommendations for a cultural resources inventory. Considerations included compliance under CEQA and Section 106 of the NHPA.

Santa Ana Watershed Project Authority Reach 5 Project, Riverside County, California. As principal investigator, Mr. Giacinto managed provided recommendations to SAWP for a monitoring approach that would satisfy both State Water Boad and Pechanga tribe interests. Project included archaeological monitoring of areas along Tescal Canyon Road and met compliance under CEQA and Section 106 of the NHPA.

Santa Margarita Hidden Ridge Project, Orange County, California. As principal investigator, Mr. Giacinto managed the survey, SCIC archival searches, tribal correspondence, and reported mangement recommendations for a cultural resources inventory. The proposed interesected two NRHP-listed resources and a NRHP-listed archaeological district. Mr. Giacinto developed and managed testing efforts to approriately define significant deposits and prepared a monitoring plan. Considerations included compliance under CEQA and Section 106 of the NHPA, and project was successfully permitted.

South Orange County Water Authority Brine line Project, Orange County, California. As principal investigator, Mr. Giacinto managed an updated survey, archival searches, tribal correspondence, and reported mangement recommendations for a cultural resources inventory requiring Army Corps review for Section 106 compliance. Mr. Giacinto successfully re-deliniated NRHP-listed archaeological resource boundaries based on review of survey and archival data. Considerations included compliance under CEQA and Section 106 of the NHPA.

Phase I Archaeological Inventory Report for the San Juan Creek Outfall Project, Orange County, California. As principal investigator, Mr. Giacinto managed the survey, archival searches, tribal correspondence, and reported mangement recommendations for a cultural resources inventory. Considerations included compliance under CEQA and Section 106 of the NHPA.

Carlsbad Desalination Third Addendum to EIR Biological Survey and Monitoring, Poseidon Water LLC, Carlsbad, California. As archaeological consultant, Mr. Giacinto conducted archaeological monitoring and consultation on an as-needed basis.

Old Mission Dam, City of San Diego, California. As principal investigator, Mr. Giacinto conducted an inventory, coordinated survey, and prepared recommendations for the maintenance of the National Register of Historic Places listed resource, Old Mission Dam.

Otay River Wetland Mitigation, Poseidon Water LLC, San Diego, California. As field director, Mr. Giacinto conducted a cultural resources survey of a mitigation property, managed by the U.S. Fish and Wildlife Service (USFWS), to be used for estuary restoration.

Vallecitos Water District Rock Springs Sewer, Infrastructure Engineering Corporation, San Diego, California. As principal investigator, Mr. Giacinto coordinated a SCIC records search, NAHC and Native American consultation, archaeological survey, and preparation of a negative technical letter report for this small residential development. The mitigation strategy did require additional archaeological monitoring based on the potential to encounter subsurface cultural resources. Recommendations were submitted to the Vallecitos Water District.

Relevant Previous Experience

Attended AB 52 Training Hosted by UAIC, Roseville, California. Attended CEQA AB 52 training hosted by United Auburn Indian Community. Was provided training on tribal perspected provided by UAIC, Pechanga, and NAHC as well as representing council. Also talks by Tom Gates of the Energy Commission.

Guest Lecturer in Cultural Resources for Upper Division CEQA Course, University of San Diego, California. As Cultural Resources Lecturer, Mr. Giacinto was invited to present on Cultural Resources history and management under CEQA for an upper devision USD course in April, 2015.. A presentation was created with the intention of poviding a contextual and technical understanding of how culturl aresources are interpreded and evaluatued under CEQA. The implications relating to the Friends of Mamoth (1972) decision and other cases were outlined in detail. AB-52 considerations and timing were summarized, and implications of Tribal Cultural Resources as a class of resource discussed.

Investigation of Emergent Trends of San Diego Cultural Resource Management, San Diego County, California. As ethnographic researcher, conducted verbal, semi-structured interviews with 17 archaeologists, policy makers, and Native American monitors and curators regarding the history and current practice of Cultural Resource Management. Information was contextualized through extensive background research using legal, academic, specialized, and archival sources. Analysis employed a synthesis of cultural anthropological and archaeological theory and practice. Results were published as *M.A. thesis in Anthropology* at San Diego State University (2012).

Needs Assessment/Diagnostic for the Community of La Sierra de San Francisco, Baja California Sur, Mexico. As ethnographic researcher, worked for San Diego State University through a grant provided by the International Community Foundation to conduct a general needs assessment in a UNESCO protected community within a UNESCO defined region of World Heritage, la Sierra de San Francisco. Resolved to help with improving the infrastructure of potable water, assisting in the construction of a system of telecommunications for education, and conducting workshops aimed at the preservation of local prehistoric and historical cultural and archaeological resources (2009-2011).

Ethnographic Field School, Zimatlan, Oaxaca, Mexico. As ethnographic student/researcher for San Diego State University, lived with local family and conducted interviews with local population regarding microcredit, sustainable/traditional agriculture and husbandry. Additionally, compiled audio/visual digital stories with local youth and conducted training in research and appropriate documentation. Emphasis was placed on dietary and generational cultural changes (2008).

Research Assistant, San Diego State University Collections Management. As graduate student at SDSU, worked in Collections Management under the instruction of Dr. Lynn Gamble (2007). Responsibilities included laboratory analyses, data entry, record processing, and collections curation management.

Research Assistant, South Coastal Information Center, San Diego State University. As graduate student at SDSU, worked at SCIC under the instruction of Dr. Seth mallios (2008). Responsibilities included site record and report processing and resource mapping.

Archaeological Field School, San Diego State University. As graduate student at SDSU, attended an archaeological fieldschool at Cuyamaca Complex Type Site under the instruction of Dr. Lynn Gamble (2007).

Archaeological Researcher, Institute of Archaeomythology. As as researcher and photographer, attended lectures and assissted with symposiums in Bulgaria, Serbia and Romania (2004,2008)

Archaeological Field School, Sonoma State University. As undergraduate student at SSU, attended an archaeological fieldschool under the instruction of Dr. Adrian Praetzellis (2005).

Publications

Emergent Trends of Cultural Resource Management: Alternative Conceptions of Past, Present and Place. M.A. thesis in Anthropology, San Diego State University. 2012.

A Qualitative History of "Cultural Resource" Management. anthropologiesproject.org. May 15, 2011.

Lake Cahuilla Cultural Resources Management Plan. ASM PARC. April, 2011.

A Qualitative Investigation of "Cultural Resource" Management In San Diego. The Society for the Anthropology of North America. April 2010.

A Qualitative History of "Cultural Resource" Management. ethnographix.org. May 15, 2010.

Conway, F., R. Espinoza, and A. Giacinto. 2010 Results of Needs Assessment Conducted with Communities of La Sierra de San Francisco, 2009-2010. Submitted to the International Community Foundation.

Selected Technical Reports

Giacinto, Adam, William Burns, and Angela Pham 2017. Cultural Resources Inventory and Extended Phase I Report for the Rohnert Park Water Tank Project, Sonoma County, California

Giacinto, A. and A. Pham 2015. *Phase I Archaeological Inventory Report for the El Toro Recycled Water Project, Orange County, California.* Prepared for the El Toro Water District and submitted to the City of Laguna Niguel.

Giacinto, A. 2015. *Negative Cultural Resources Inventory for the Vacaville Center Campus Project, City of Vacaville, California*. Prepared for and submitted to the Solano Community College District

Giacinto, A. 2015. *Archaeological, Built-Environment, and Paleontological Resources Inventory for the 8777 Washington Blvd. Culver City Project, Los Angeles County, California*. Submitted to the City of Culver.

Giacinto, A. 2015. *Phase I Archaeological Inventory Report for the Santa Margarita Recycled Water Project, Orange County, California*. Prepared for the Santa Margarita Water District and submitted to the City of Laguna Niguel.

Wolf S. and A. Gicinto 2015. *Cultural Resources Survey for the Otay Village IV Project, San Diego County, California*. Submitted to the County of San Diego.

Wolf S. and A. Gicinto 2015. *Cultural Resources Survey for the BayWa Granger Solar Project, San Diego County, California*. Submitted to the County of San Diego.

Wolf S. and A. Gicinto 2015. *Cultural Resources Survey for the Covert Canyon Project, San Diego County, California*. Prepared for Michael Baker International. Submitted to the NPS - Cleveland National Forrest.

Giacinto, A. 2015. *Phase I Archaeological Inventory Report for the San Juan Creek Outfall Project, Dana Point, California.* Prepared for and submitted to the South Oarnge County Water Authority.

Giacinto, A. and N. Hanten 2015. *Wastewater Treatment Plant Secondary Process Upgrade Improvement Project, City of Auburn, Placer County, California.* Prepared for and submitted to the City of Auburn.

Giacinto, A. 2014. *Data Recovery for CA-RIV-3419 (Locus-14), A Multi-Component Site located within the McCoy Solar Energy Project Right of Way*. Submitted to the Bureau of Land Management.

Giacinto, A. 2014. *Work Plan to Complete Mitigation Requirement for CA-RIV-3419, A Multi-Component Site located within the McCoy Solar Energy Project (MSEP) Right of Way*. Submitted to the Bureau of Land Management.

Giacinto, A. 2014. *Summary of Data Recovery for CA-RIV-10225, A World War II site located within the McCoy Solar Energy Project (MSEP) Right-of-Way*. Submitted to the Bureau of Land Management.

Giacinto, A. 2014. *Phase I Archaeological Inventory Report for the Mission Beach Residences Project, San Diego County, California. Prepared for McKellar-Ashbrook LLC*. Submitted to the City of San Diego Development Services Department.

Giacinto, A. 2014. *Negative Cultural Resources Inventory for the Coast Hwy 101 Pump Station Project, City of Encinitas, California*. Prepared for and submitted to the City of Encinitas.

Giacinto, A. 2014. *Phase I Archaeological Inventory Report for the Santa Barbara Place Residences Project, San Diego County, California. Prepared for McKellar-Ashbrook LLC*. Submitted to the City of San Diego Development Services Department.

Giacinto, A. 2014. *Negative Cultural Resources Phase I Survey Report for the Oro Verde Project, San Diego County, California*. Submitted to County of San Diego Department of Planning and Landuse.

Giacinto, A. 2014. *Cultural Resources Technical Report for the West Campus Student Housing Complex Project, San Diego County, California*. Submitted to County of San Diego Department of Planning and Landuse.

Hale, M. and A. Giacinto 2014. *Negative Cultural Resources Phase I Inventory for the Canergy Project, Brawley, Imperial County, California*. Prepared for Ericsson-Grant Inc. Submitted to Imperial County Planning and Development.

Castells, J. and A. Giacinto 2014. Historic Resources Inventory for the Normal Street Project, City of San Diego, California. Submitted to City of San Diego..

Giacinto, A. 2013. *Phase I Cultural Resources Assessment Report for the Smoke Tree Wind Project, Riverside County, California*. Prepared for Ogin, Inc. Submitted to County of Riverside Planning Department.

Castells, J. and A. Giacinto 2013. *Archaeological, Historical, and Paleontological Resources Inventory for the 5th Avenue Chula Vista Development Project, City of Chula Vista, California*. Prepared for E2 ManageTech, Inc. Submitted to City of Chula Vista.

Giacinto, A. 2013. *Archaeological Monitoring Summary Memo for the South Palm Canyon Improvements Project, Agua Caliente Band of Mission Indians Reservation, California.*

Giacinto, A. 2013. Cultural Resources *Phase I Survey Report for the NorthLight Power Valley Center Solar Power Project, San Diego County, California*. Prepared for RBF Environmental. Submitted to County of San Diego Department of Planning and Landuse.

Giacinto, A. and M. Hale 2013. *Phase I Cultural Resources Assessment Report for the WCSS0011R1 and WCS00012R1 Project, Riverside County, California*. Prepared for FloDesign Wind Turbine Corp. Submitted to County of Riverside Planning Department.

Giacinto, A., and M. Hale. 2013. *Cultural Resources and Paleontological Survey Report for the St. John Garabed Church Project, San Diego County, California*. Submitted to the City of San Diego, California.

Giacinto, A. 2013. *Cultural Resources Phase I Addendum Report for the Old Mission Dam Maintenance Project, San Diego County, California*. Prepared for the City of San Diego.

Giacinto, A. 2013. *Archaeological Reconnaissance for Categorical CEQA Exemption for the Makani/Google Airborne Wind Turbine Pilot Project, Alameda County, California.*

Giacinto, A. 2013. *Negative Findings Letter Report for a Phase I Cultural Resources Study Conducted for the VWD Rock Springs Project, San Diego County, CA*. Submitted on behalf of IEC Corporation to the Vallecitos Water District.

Hale, M., A. Giacinto, and N. Hanten, edt. 2013. *Cultural Resources Inventory and Evaluation for the Yokohl Ranch Project, Tulare County, California*. Contributions by S. Hector, A. Garcia-Herbst, L.. Akyüz, M. Becker, S. Ní Ghabhláin, and S. Stringer-Bowsher

Hale, M., and A. Giacinto 2013. *Yokohl Ranch Project EIR, Chapter 4.6, Yokohl Valley, Tulare County, California*

Giacinto, A., and M. Hale 2012. *Cultural Resources Survey Report for the St. John Garabed Church Project, San Diego County, California*

A. Giacinto and M. Hale, 2012. *Cultural Resources Inventory for the U.S. Fish and Wildlife Service Otay River Estuary Restoration Project, Otay Mesa, San Diego County, California*

Giacinto, A. 2012. Negative *Cultural Resources Survey Report for the Kaiser Permanente San Diego Central Medical Center, San Diego County, California*

Hale, M., and A. Giacinto 2012. *Cultural Resources Inventory for the Orange County Fire Authority Project, Peters Canyon, Orange County, California*

Hale, M., and A. Giacinto 2012. *North Embarcadero Port Master Plan Amendment (NE-PMPA) EIR, Chapter 4.9, Port of San Diego, San Diego, California.*

Hale, M., and A. Giacinto 2012. *Rio Mesa Solar EIS, Chapter 4.6, Brightsource, Riverside County, California.*

Giacinto, A., J. Daniels,, I. Scharlotta, ,M.J. Hale 2012. *Archaeological Evaluation for the Rugged Solar Project.* San Diego County, California.

Giacinto, A., J.T. Daniels, M.J. Hale, 2012. *Archaeological Evaluation for the Tierra Del Sol Project.* San Diego County, California.

Hale, M., S. Andrews, M. Dalope, A. Giacinto, and N. Hanten 2012. *Phase I Cultural Resources Inventory of 7,650 acres in Management Areas 1B, 3D, and 3E Edwards Air Force Base, Kern County, California*. Prepared for Richard Bark, JT3 LLC, Subcontract Number 1A10000101.

Hale, M., A. Giacinto, and J. Schaefer 2012. *Class III Cultural Resources Inventory for the Campo Invenergy Project, Campo Indian Reservation, San Diego California.*

Giacinto, A., and M. Becker 2012. *Padre Dam Eastern Service Area Secondary Connection-Alternative Site Location.* Letter Report. San Diego County, California.

Giacinto, A., and J. Cook 2011. *Cultural Resource Study for the UOMP Project.* Letter Report.San Diego County, California.

Ghabhláin, S., A. Giacinto, and T. Quach 2011. *Cultural Resources Evaluation for the Quarry Creek Project.* City of Carlsbad,California.

DeCarlo, M.M., A. Giacinto, and W.T. Eckhardt 2010. Cultural Resources Inventory for the *Proposed Colorado River Substation Expansion Project.* Riverside County, California.

Cook, J.R., A. Garcia-Herbst, A. Giacinto, and M. Dalope 2010. *Addendum to HDR|e²M Final Report: Prehistoric Artifact Scatters, Bedrock Milling Stations and Tin Can Dumps: Results of a Cultural Resources Study for the SDG&E East County Substation Project*. San Diego County, California.

Presentations

Shifting Concepts of "Cultural Reousource" in CRM. Presented by Adam Giacinto during Renewable Energy Symposium for Society for California Archaeology Conference. Ontario, CA. 2016.

Shifting Concepts of Non-Significant Cultural Resources. Presented by Giacinto, Comeau, and Hale for Zzyzx Conference. Zzyzx, CA. 2015.

Managing California's Cultural Resources on Public Lands: A Third Party Consultant Perspective. Presented Hale and Giacinto for Society for California Archaeology, San Diego, 2015.

Invited Guest Lecture on Cultural Resources in CEQA. University of San Diego, CA. 2015.

A GIS Analysis of Ancient Lake Cahuilla Archaeological Sites, Riverside County, CA, United States. For Society for California Archaeology, San Diego, 2012.

Emergent Trends of San Diego Cultural Resource Management. For Society for California Archaeology, San Diego, 2012.

A GIS Analysis of Ancient Lake Cahuilla Archaeological Sites, Riverside County, CA, United States. For Balancias y Perspectivas, National Institute of Archaeology and History (NIAH), Mexicali, MX, 2011.

APPENDIX B

CONFIDENTIAL

Records Search Results

APPENDIX C

Department of Parks and Recreation (DPR) Forms

State of California ♁ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6z

Other Listings
Review Code Reviewer Date

Page 1 **of** 12 ***Resource Name or #:** (Assigned by recorder) Emerson Hall

P1. Other Identifier:

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**

***a. County** Yolo County **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Merritt **Date** 1992 **T** 8N; **R** 2E; SW ¼ **of** SW ¼ ☐ **of Sec** 9; Mount Diablo **B.M.**

c. Address 565 Oxford Circle City Davis Zip 95616

d. UTM: (Give more than one for large and/or linear resources) Zone 10S , 0607723 mE/ 4267300 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)

APN: 034-252-030. The project site is located at 565 Oxford and contains a single building. Emerson Hall is bordered by Wake Forest Drive to the north, Oxford Circle to the east, Oxford Circle and the Cuarto Dining Commons to the south, and a parking area then the north building of the University Court Apartments to the east.

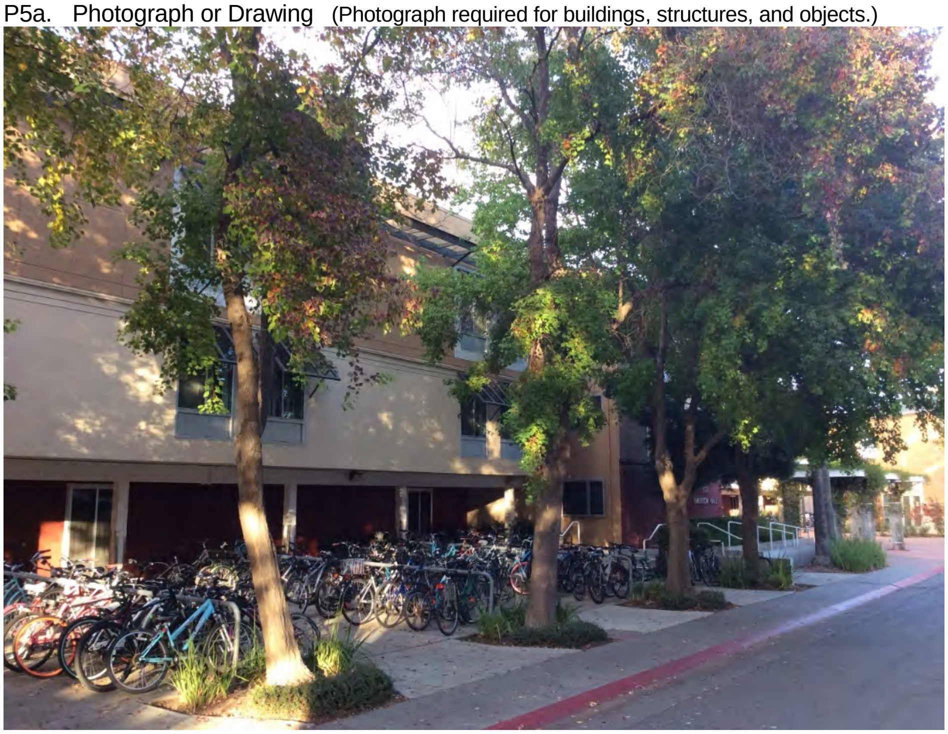
***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Emerson Hall is a three story dormitory for the University of California Davis, located in the Cuarto neighborhood. It accommodates up to 500 beds in 250 rooms, which cannot currently be tripled due to the room size. The three story dormitory building is in a hollow-trapezoid-shaped plan with two interior courtyards, and features a flat roof with high parapets. Emerson Hall was constructed in 1965 by a private developer and was acquired by UC Davis in 1986. (See Continuation Sheet)

***P3b. Resource Attributes:** (List attributes and codes) HP3

***P4. Resources Present:** ☒ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) IMG0847, November 14, 2017; View to northeast

***P6. Date Constructed/Age and Source:** [x] Historic ☐ Prehistoric ☐ Both
1965; (Garcia 1964)

***P7. Owner and Address:**
University of California Davis
1 Shields Ave
Davis, CA 95616

***P8. Recorded by:** (Name, affiliation, and address) Kate Kaiser
Dudek
38 North Marengo Avenue
Pasadena, CA 91101

***P9. Date Recorded:** December 13, 2017

***P10. Survey Type:** (Describe)
Pedestrian

***P11. Report Citation**: (Cite survey report and other sources, or enter "none.")
Kaiser, Murray and Corder. 2017. Cultural Resources Report for the University of California Davis, Emerson Hall Project. Dudek.

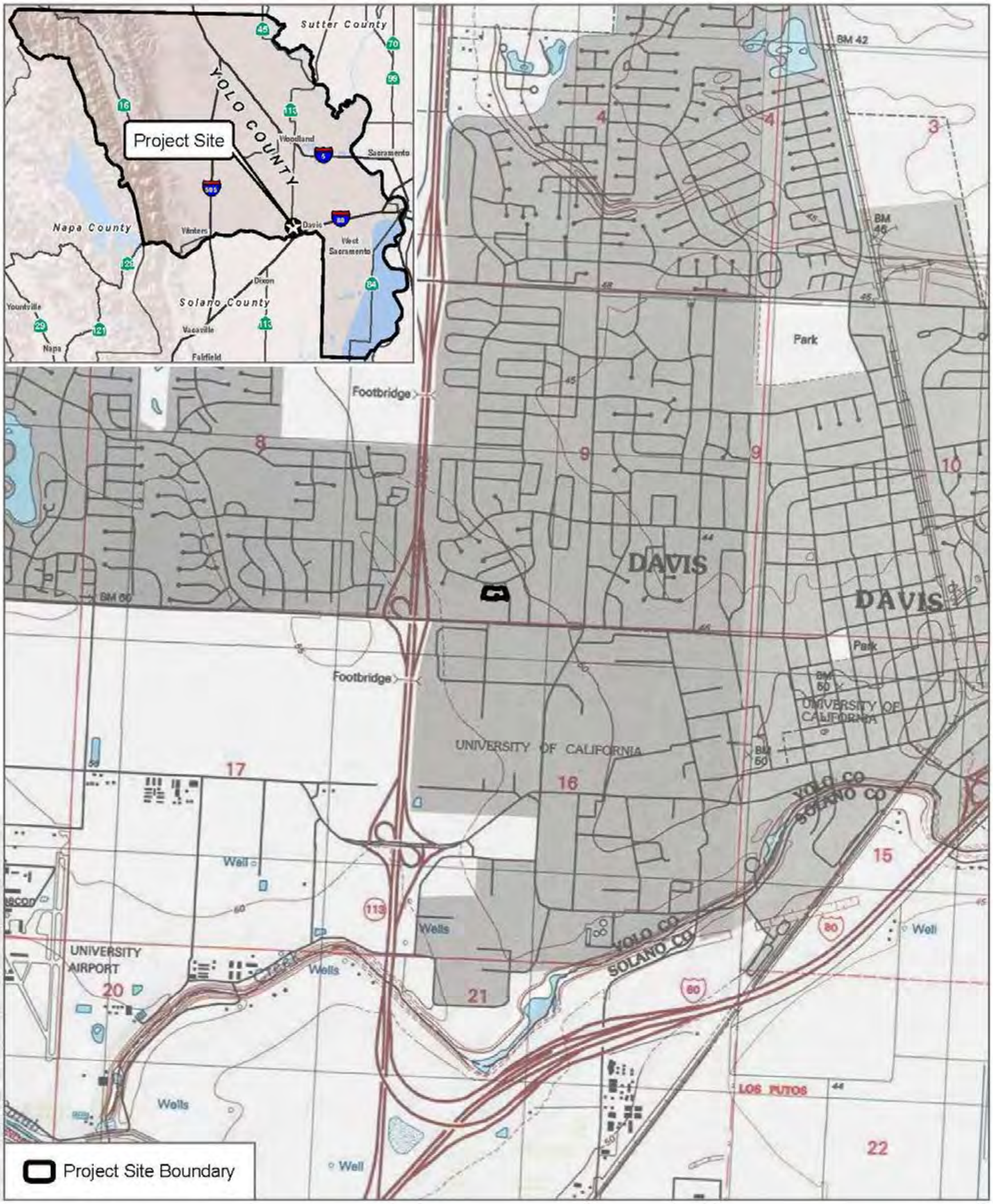
***Attachments:** ☐NONE ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California ♁ Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 2 of 12 ***Resource Name or #** (Assigned by recorder) _Emerson Hall__________

***Map Name:** Merritt, CA ***Scale:** 1:24,000 ***Date of map:** 1992



SOURCE: USGS 7.5-Minute Series Merritt Quadrangle(s)
Township 8N/Range 2E/Section 09

DUDEK 0 1,000 2,000 Feet

FIGURE 1
Project Location
Emerson Hall Replacement Project

B1. Historic Name: Emerson Hall
B2. Common Name: Emerson Hall
B3. Original Use: Student Dormitory B4. Present Use: Student Dormitory
***B5. Architectural Style:** Neo-Mansard
***B6. Construction History:** (Construction date, alterations, and date of alterations)
Emerson Hall was constructed in 1965. See Continuation Sheet for Alterations)
***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**
Webster Hall, 541 Oxford Circle, Davis, 95616
Cuarto Dining Commons, 550 Oxford Circle, Davis, 95616

B9a. Architect: Louis "Buzz" Garcia b. Builder: Robert C. Powell
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance n/a **Property Type** Dormitory **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

Acquiring and Planning the Site

The subject property, Emerson Hall, is one of three dormitories built in 1965. Together with Webster Hall and Heritage House, as well as Thoreau Hall built in 1988, the buildings comprise the Cuarto Area residence halls, northwest of the central UC Davis campus. Emerson Hall, Webster Hall, and Heritage House were originally privately built and operated dormitories in a partnership with UC Davis. All three were designed by Buzz Garcia and built by developer Robert C. Powell in 1965 (Figure 7). The halls were planned as "perimeter buildings," built in a square around a recreational courtyard and pool, with the residential units forming the square built as close to the lot lines as possible. (See Continuation Sheet)

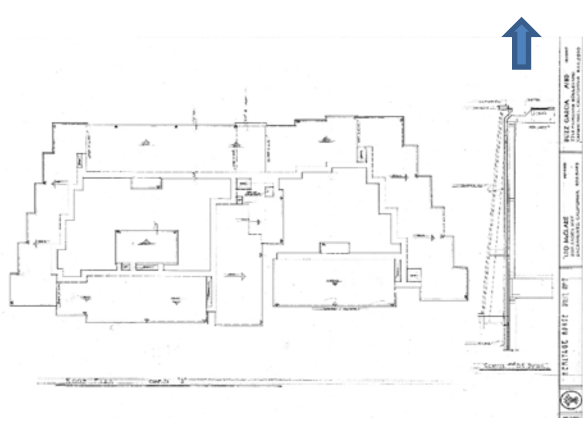
B11. Additional Resource Attributes: (List attributes and codes) n/a
***B12. References:**
(See Continuation Sheet)

B13. Remarks:

***B14. Evaluator:** Kate G. Kaiser
***Date of Evaluation:** 12/13/2017

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



P3a. Description (Continued):

Emerson Hall is a dormitory built in 1965, and is part of the Cuarto dormitory neighborhood northwest of the UC Davis core campus. The three-story dormitory building is in a hollow, trapezoid-shaped plan with two courtyards, and features a flat roof with high parapets. Exterior walls are clad in two-toned plaster with equally spaced control joints and brick veneer. The floors are separated by a metal, horizontal band painted light beige, much like a stringcourse in traditional masonry buildings. Windows throughout the building consist of paired, tall, metal-framed two-lite windows with metal panels beneath the bottom light on the second and third floors, and a single tall metal-framed two-lite window with metal panels beneath the bottom light on the first floor.

The building is best described as a 21st Century Modern: Découpage-style building because of its liberal use of three-dimensional wall planes, textures and wall cladding materials, flat roof, metal windows, and irregular building massing.

On the main (south) elevation, the wall surface is irregular along the entire elevation, stepping forward (south) and backward (north) into the wall plane (Figure 13). The main entrance on this elevation faces south onto Oxford Circle and is marked by metal lettering attached to the wall surface reading “565 / Emerson Hall.” Windows are arranged such that the windows of all three floors are in line. Windows are tall, metal-framed, two-lite, arranged horizontally with a metal panel below the two lites. The windows of the second and third floors have a metal awning shade permanently fixed to the wall surface. After the first two stepped segments along the main elevation, the first floor recesses back roughly 10 feet, and the upper floors create an overhang that is supported by evenly spaced metal posts. The wall surface in the recessed area is clad in red-painted brick veneer. The right of this is the hallway leading to the main entrance, which features a light-beige wall surface on all three floors and a metal, automatic sliding door with a card reader. On the second and third levels above the main entry door there are two balconies recessed into the wall with metal railings. To the right of the main entry hallway, the window pattern, wall color pattern, irregularly stepped wall plane, and recessed first floor wall with brick veneer continue to the southeast corner. There are two secondary entrances along the south elevation. The secondary entrance on the west side of the south elevation is slightly recessed on the first floor and is a white, metal and glass door with a white surround. The secondary entrance on the east side of the building features the same light-beige wall surface on all three floors, metal sliding doors with card readers, and balconies on the second and third floors. This entrance faces south toward the Cuarto Dining Commons building, across a small, paved courtyard. The area south of Emerson Hall is landscaped with shrubs, trees, and decorative grasses.

The east elevation features a regularly stepped, sawtooth-style wall plane. It faces east toward a parking area. Each stepped portion features one two-lite window on the first floor, a pair of metal two-lite windows on the second floor, and another pair of metal two-lite windows within a light-beige plaster panel on the third floor. The first floor is recessed roughly 10 feet, and the wall features red-painted brick veneer. The second floor is light-beige plaster cladding without seams, separated from the third floor by a metal horizontal band. The third floor features dark-beige painted plaster cladding with equally spaced control joints (with the windows trimmed in light-beige plaster panels). There are no entrances along this elevation.

The north elevation features an irregular stepped façade, similar to the main elevation, facing Wake Forest Drive. The north elevation first and second levels consist of seamless light-beige plaster cladding, with the exception of the first floor recessed sections that are clad in a painted brick veneer. The third floor is dark-beige plaster cladding with equally spaced control joints and windows outlined in light-beige panels. This elevation features a single entryway near the northeast corner. The north elevation entryway is recessed under the second and third floors and features a glass plate wall with a single glass-and-metal door. Windows along this elevation are identical in format to the other elevations. The area north of the north elevation is landscaped with shrubs, trees, and decorative grass.

The west elevation features a regularly stepped, sawtooth-style wall plane, mirroring the east elevation. It faces west toward the north/south segment of Oxford Circle that leads to the circle itself. Each stepped portion features one two-lite window on the first floor, a pair of metal two-lite windows on the second floor, and another pair of metal two-lite windows within a light-beige plaster cladding with equally spaced control joints on the third floor. Unlike the east elevation, the first floor does not feature any recessed sections, and there is no painted brick veneer on this elevation. Windows are identical in format to the other elevations. The area west of the west elevation is landscaped with a lawn, trees, and shrubs.

Alterations to the Building and Site

In 1986, UC Davis acquired and renovated Emerson Hall, Webster Hall, and Heritage House through third-party company Helper Real Estate Investments of Moraga. According to the Facilities Management Department records, renovations were extensive. Many of these renovations were minor and included repainting (1987, 1992, 1993, 1998, 1999), window replacement (in-kind materials) (1994, 2006), increasing accessibility (1990, 1992, 2001), and shower and tub replacement (1987, 1991, 2001). Several renovation projects are of note because of the loss of original materials or changes to physical appearance. In 1989, the UC Davis Physical Plant added an HVAC system and ducting, which pierced the roof and tore out old ducting in all the dormitory rooms. In 1992, the UC Davis Physical Plant performed asbestos abatement, which involved replacing interior sheetrock walls, T-grid ceilings, and repainting the building. Also in 1992, the Physical Plant removed the original south entry doors and replaced with sliding glass and metal doors. Previously they had been outward-swinging wood doors with decorative and trim paneling. In 1998, UC Davis contracted Fisher Friedman Associates from San Francisco to conduction seismic renovations of Emerson and Webster Halls. This renovation involved the complete removal of the shingled, Mansard-style roof and wall cladding, which significantly altered the appearance of Emerson Hall (Figure 8). The cladding was replaced with “plaster” cladding with equally spaced control joints. At this time, metal awnings were also added to windows and painted metal trellises were added to the south elevation landscaping and above the third-story windows on the south elevation. In the interior courtyards, exterior walkways were altered to remove the low, solid plastered wall, partially enclosing the walkway. The plaster wall was replaced with a metal railing. The Fisher Friedman and Associates project lasted from 1999–2000 and significantly changed the physical appearance of Emerson Hall, causing it to appear as a 21st Century Modernism: Découpage-style building (Figure 9) (Fisher Friedman Associates 1998; Glover 1965, 1986; Garcia 1964; UC Davis Physical Plant 1987, 1989, 1990, 1992a, 1992b, 1992c, 1992d, 1992e, 1993, 1994a, 1994b, 1998, 2001, 2006).

B6. Construction History (Continued):

Alterations are as follows (UC Davis Physical Plant 1987, 1989, 1990, 1992a, 1992b, 1992c, 1992d, 1992e, 1993, 1994a, 1994b, 1998, 2001, 2006):

- Repainting (1987, 1992, 1993, 1998, 1999)
- Window replacement (in-kind materials) (1994, 2006)
- Increasing accessibility (1990, 1992, 2001)

- Shower and tub replacement (1987, 1991, 2001)
- HVAC addition (1989)
- Asbestos abatement (1992)
- Removal and replacement of main (south) entrance (1992)
- Seismic renovations, Mansard roof shingle removal and replacement, addition of metal awnings and details, renovation and material replacement of interior courtyard, removal of original decking and landscaping in interior courtyard (1998)

B10. Significance (Continued):

NRHP/CRHR Statement of Significance

In consideration of the project site's history and requisite integrity (see "Integrity Discussion," below), Dudek finds Emerson Hall not eligible for listing in the NRHP or CRHR based on the following significance evaluation and in consideration of national and state eligibility criteria.

Criterion A/1: Associated with events that have made a significant contribution to the broad patterns of our history.

The building type and construction of Emerson Hall in 1965 places it within a period of "Explosive Growth (1959–1971)," like numerous other multi-family residential buildings throughout the City of Davis and on the UC Davis campus, per Brunzell (2015). This period is described as having City-approved residential and commercial growth, which correlated to the increase in student population, permanent teaching staff, and administrative staff after UC Davis became a general campus in 1959. Fifty-six new subdivisions were recorded in Davis from 1960 through 1969, adding thousands of homes to growing Davis. In the same period, the City of Davis did not make large annexations to increase the size of the City. The result was that, within City boundaries, residential housing intensified and multi-family residences such as apartments and cluster-planned subdivisions accounted for a great deal of the residential growth. Apartments emerged as an important building type during the period of explosive growth. Robert C. Powell, the Emerson Hall developer, is specifically mentioned for constructing 4,000 apartment units between 1961 and 1972. Apartments were no longer limited to residential infill, but now took up entire City blocks, changing the landscape of the City (Brunzell 2015; Fitch 1998; Lofland 2004).

Brunzell historical's context states that significant residential properties in the "Explosive Growth" period (1959–1971) must conform to the following criteria (Brunzell 2015, 48):

> Association with events that have made a significant contribution to the broad patterns of Davis history. Residential properties from this period may be specifically associated with the growth of the University after its transition to a general campus in 1959 and the subsequent rapid residential expansion of the City of Davis. They may also be associated with the development of bike lanes and green belts, important aspects of Davis history during this period.

Although Emerson Hall's construction took place during this important period of growth and development, this building form was one of many constructed by Robert C. Powell, so it is not unique to the period of growth and development. In addition, the heavily altered nature of the building compromises its association, as it is no longer representative of the construction methodology and aesthetic used during this period of explosive growth. Furthermore, the site has no notable association with green belts or bike lanes. Despite its construction during this broad pattern of development in the City of Davis, the subject property does not appear eligible under NRHP/CRHR Criteria A/1 (Ames and McClelland 2002; NPS 1990).

Criterion B/2: Associated with the lives of persons significant in our past.

All owner names identified with Emerson Hall were researched for possible significance. Developer Robert C. Powell financed the construction of, owned, operated, and managed Emerson Hall from 1965 through 1986, when UC Davis acquired ownership of the property. Robert C. Powell's association with this building is not unique to the subject property, since he was involved in the construction of hundreds of buildings in the City of Davis (Boland n.d.).

Furthermore, Powell's developments tend to share common community characteristics: incorporation of private green space or private water features for apartment residents, property care and maintenance offered in perpetuity, "luxury" marketing, intensive landscaping, and a visual pull away from the surrounding streetscape toward the center or core of the development. Emerson Hall does not embody these essential design characteristics to the extent that other Powell developments do, and many of these characteristics were lost when UC Davis acquired and renovated the property. Lastly, Powell went on to increase the scale of his developments over time; his early projects consisted of a few dozen or a few hundred apartment units, but his later projects numbered in the thousands of units while retaining the community characteristics listed previously. Emerson Hall falls squarely in the middle range and is unremarkable for both its scale or development period within the chronology of Powell's career. The subject property is not unique or innovative among these developments, and there are many other Davis area developments by Powell of the same or similar scale. For these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria B/2 (Boland n.d.; NPS 1990).

Criterion C/3: Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

Emerson Hall is a dormitory that Louis "Buzz" Garcia designed in the Neo-Mansard style in 1964. Garcia was a local architect and designer who worked within the Davis and greater-Sacramento areas where he built mainly apartments. Neo-Mansard and other eclectic styles provided needed variety among the popular Ranch and Contemporary styles that did not have much decoration or visual variety. The subject property was built in 1965, prior to the beginning of the Neo-Mansard popular period (1970s), and was noted in the *Sacramento Bee* for Garcia's use of the shingle false-Mansard to reduce the apparent height of the three-story dormitory. Garcia, however prolific and popular around the greater Sacramento area, does not constitute a master architect. His designs for Emerson, Webster, and Heritage House were celebrated in a 1965 *Sacramento Bee* article for the "compelling design" of his roof treatment, but the execution is unremarkable in Davis. Other Neo-Mansard apartments persist in lots adjacent to Emerson Hall, such as the University Court Apartments at 515 Sycamore Lane, La Casa de Flores at 517 Oxford Circle, and the Sigma Nu Fraternity at 525 Oxford Circle (Freshwater 1965a, 1965b; Garcia 1964).

Although the subject property retains some elements of the Neo-Mansard style (i.e., recessed entries and windows, use of parapets to hide mechanical structures on the roof, first floor cladding in brick veneer), due to significant alterations in the late 1990s, important character-defining features were lost, including the Neo-Mansard faux roof and shingle siding. Finally, the subject property does not appear eligible as a contributor to a historic district. For all of these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria C/3.

Criterion D/4: Have yielded, or may be likely to yield, information important in prehistory or history.

There is no evidence to suggest that this property has the potential to yield information important to state or local history, nor is it associated with a known archaeological resource. Therefore, the property is recommended not eligible under NRHP/CRHR Criterion D/4.

City of Davis Criteria

The City of Davis Landmark designation criteria closely follow those of the NRHP and CRHR with regard to consideration of important events, people, and architectural merit. Therefore, the subject property is recommended not eligible for the reasons stated above under City of Davis Code 40.23.060(a)(1): association with events that have made a significant contribution to the broad patterns in the history of Davis. Additionally, Emerson Hall not does not merit designation as a City of Davis Merit Resource, since it does not meet the City of Davis Code (40.23.060(c)) integrity requirements. Emerson Hall is not within a City of Davis or nationally nominated historic district. Based on the NRHP/CRHR/CHL criteria discussion above, and the requirements of City of Davis Code 40.23.060, the subject property is recommended not eligible for listing under all City of Davis designation criteria.

Integrity Discussion

Integrity is the authenticity of a historical resource's physical identity, as evidenced by the survival of characteristics that existed during the resource's period of significance and the historical resource's ability to convey that significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity. Similar stipulations apply to listing at the state level, but the threshold is lower for the CRHR, particularly if the site has potential to yield significant scientific or historic information. The evaluation of integrity is sometimes a subjective judgment, but it must always be grounded in an understanding of a property's physical features and how they relate to its significance. In consideration of the NRHP, either historic properties retain integrity or they do not. Seven aspects or qualities, in various combinations, define integrity: location, design, setting, materials, workmanship, feeling, and association (NPS 1990). To retain historic integrity, a property generally possesses several, if not most, of the aspects. The retention of specific aspects of integrity is paramount for a property to convey its significance.

The subject property's integrity is as follows:

Location: The building is sited on the original location of construction in its original orientation. Therefore, the subject property retains integrity of location.

Design: The building was subjected to several alterations over time that have significantly compromised its integrity of design, including the complete removal of the faux Mansard roof, changes to window treatments, changes to cladding materials, the addition of window awnings, reconfiguration of the trellis, reconfiguration of the main (south) entry, and significant alterations to the interior of the building. Today, the building reads as a 21st century Modernist Découpage-style building, with varying wall textures and cladding materials. Therefore, the building does not maintain integrity of design.

Setting: Although the subject property maintains its original property boundaries, the surrounding areas have changed significantly over time. The property's integrity of setting was compromised by the demolition of the original Webster Hall and Heritage House, which were developed in conjunction with Emerson Hall. Additionally, Oxford Circle and the surrounding neighborhood have seen some development since Emerson Hall was built in 1965. Since the 1968 historic aerial, the first aerial showing Emerson Hall and the one with the closest date to the building of Emerson Hall, the area south of Russell Boulevard has seen significant development, changing from agricultural field to clustered apartment complex. Oxford Circle Park and most other buildings on Oxford Circle retain their original configurations and locations, but the alterations to the Cuarto Dining Commons and the demolition of Webster Hall leave the setting of the Oxford Circle neighborhood altered. Therefore, the building does not retain integrity of setting (NETR 2017).

Materials: Numerous alterations to Emerson Hall compromised the property's material integrity, including the removal of the faux-Mansard shingle roof; the addition of plaster cladding with equally spaced control joints; the addition of metal window awnings; the addition of metal and glass sliding doors; the addition of a metal decorative trellis around the top part of the south elevation wall; and alterations to the building's interior, including reconfiguration of hallways and room sizes, and orientations. All of these alterations introduced new materials to the subject property that were not part of the original design, and removed significant, character-defining materials from the building. Therefore, the building no longer retains its integrity of materials.

Workmanship: Similar to the issue with materials, the physical evidence of craftsman's skills in constructing the original building was compromised by the exterior alterations to the building. Therefore, the building no longer retains its integrity of workmanship.

Feeling: The alterations made to the subject property significantly affect the building's ability to correlate to a dormitory designed in the Neo-Mansard style of architecture. Currently, the building reads as a 21st century Modernist Découpage-style building, with varying wall textures and materials. This is consistent with other dormitories and campus buildings built in the Découpage style, or altered to achieve the look. Even though the building does still read as a student dormitory, the removal of character-defining features greatly affected the correlation with the Neo-Mansard style. Therefore, the building no longer retains its integrity of feeling.

Association: The building is associated with local builder and real estate developer Robert C. Powell. However, Emerson Hall does not represent one of his significant projects, and is a common example of dormitory architecture during a period of explosive growth. Therefore, the building retains its association to Robert C. Powell, but does not rise to any level of significance as a representation of his work and influence.

In summary, the subject property appears not eligible under all NRHP, CRHR, CHL, and City of Davis designation criteria. Although Emerson Hall does retain its integrity of location and association, it no longer retains integrity of setting, design, materials, workmanship, or feeling. Consequently, the property does not maintain the requisite integrity to warrant listing in the NRHP or CRHR, or as a CHL.

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APPENDIX D
NOISE MEMORANDUM

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MEMORANDUM

To:	Brian Grattidge, Senior Environmental Planner
From:	Christopher Barnobi, Jonathan Leech, Dudek
Subject:	Noise Analysis for UC Davis Emerson Hall Student Housing Project
Date:	December 28, 2017
Attachment(s):	Figure 1 Attachment A–Acoustic Definitions and Discussion Attachment B–RCNM Model Inputs and Results

This memo presents the results of a noise assessment for a University of California at Davis (UCD) proposed Emerson Hall Replacement project (Project). Project background information is contained in Section 1. A summary of noise policies included in the UCD Long Range Development Plan (LRDP) Environmental Impact Report (EIR) and other local noise regulations applicable to the proposed project are included in Section 2. Section 3 presents results from noise measurements conducted on and near the site. Traffic noise exposure impacts upon the proposed project are presented in Section 4. Mechanical noise from the proposed project is discussed in Section 54. Construction noise is addressed in Section 6. Mitigation measures are included in Section 7. Appendix A presents a discussion of the fundamentals of environmental noise and vibration, for those who may not be familiar with acoustical terminology or concepts referenced in this assessment.

1 BACKGROUND

The project includes demolition and replacement of the existing 3-story, 500-student capacity residential hall located at 565 Oxford Circle, within the City of Davis. Emerson Hall is part of the Cuarto Residence Hall Area, an off-campus student housing area near the northwest corner of the Central Campus. The new residential hall would accommodate 700–800 students. There is no existing or proposed allowance for student cars at Emerson Hall, minimizing parking and traffic concerns associated with its operation.

Other residence halls are located in the vicinity. Two residence halls are located 150 feet south (Thoreau Hall and Webster) and additional residences are located 100 feet north (Wake Forest Apartments) and 115 feet east (University Court Apartments) of the Project site. A campus dining commons building is also located about 10 feet to the south. The nearby residence halls and apartments are considered noise-sensitive, while the dining commons is not.

2 NOISE SIGNIFICANCE CRITERIA

Noise levels in urban areas are most commonly described in terms of the "Community Noise Equivalent Level (CNEL), which is a 24-hour weighted average. L_{dn} (also indicated by DNL) is a metric that is very similar to the CNEL. L_{dn} results are usually within 1 dBA of CNEL, and thus these are often considered equivalent or interchangeable. For additional details regarding these metrics, see the Appendix.

City of Davis General Plan

The City of Davis General Plan includes goals and policies relating to noise and vibration. The General Plan states that "the City shall strive to achieve the "normally acceptable" exterior noise levels as shown in Table [1]." Interior noise goals are 45 dBA CNEL for residences.

Table 1
Davis Acceptable DNL and CNEL

Receptor Description	Normally Acceptable DNL or CNEL (dBA)	Conditionally Acceptable DNL or CNEL (dBA)
Residential	Under 60	60–70*
Transient Lodging- Motel, Hotels	Under 60	60–75
Office Buildings, Business Commercial and Professional	Under 65	65–75

* The City Council shall have discretion within the "conditionally acceptable" range for residential use to allow noise levels in outdoor spaces to go up to 65 dBA if cost effective or aesthetically acceptable measures are not available to reduce noise levels in outdoor use spaces to the "normally acceptable" levels. Outdoor spaces which are designed for visual use only (for example, street side landscaping in an apartment project), rather than outdoor use space, may be considered acceptable up to 70 dBA.

The General Plan goes on to address construction practices. It states:

> "[T]he following measures shall be incorporated into contract specifications to reduce the impact of construction noise.
>
> - All equipment shall have sound-control devices no less effective than those provided on the original equipment. No equipment shall have an unmuffled exhaust.
> - As directed by the City, the contractor shall implement appropriate additional noise mitigation measures including, but not limited to, changing the location of stationary construction equipment, shutting off idling equipment, rescheduling construction activity, notifying adjacent residences in advanced

of construction work, or installing acoustic barriers around station construction noise sources."

City of Davis Noise Ordinance

The Davis Municipal Code states (DMC):

(a) No person shall produce, suffer or allow to be produced on any public or private property, sounds at a level in excess of those enumerated in Table [2], when measured at its property plane…

(b) No person shall produce, suffer or allow to be produced on any multifamily residential property, sounds at a level in excess of those enumerated in Table [2], when measured inside any dwelling unit on the same property or twenty feet from the outside of the dwelling unit in which the noise source or sources may be located.

(c) Notwithstanding any other provision of this section, no person shall produce, suffer or allow to be produced any sound on any private or public property, which is audible to a person within any dwelling unit of a residential planned development or residentially zoned property, except within any dwelling unit which the sound source or sources are located to which is occupied or controlled by the person controlling such source; unless the permission, either written or verbal, of the occupants of all affected dwelling units has been obtained.

During the hours of 9:00 a.m. through 10:00 p.m., Sunday through Thursday, and 9:00 a.m. and 12:30 a.m. the following day, Friday and Saturday, such permission shall be presumed to be granted by occupants of all affected dwelling units; provided that any affected person may withdraw such consent at any time. Such withdrawal of consent may be accomplished by either verbal or written request to the person causing, or allowing, such sound to be made, or by making such request to the city police department who shall then notify the person causing, or allowing, such sound to be made.

The provisions of this subsection shall not apply to any sound generated upon a common use portion of any multiple-family dwelling between the hours of 9:00 a.m. through 10:00 p.m., Sunday through Thursday, and 9:00 a.m. through 12:30 a.m. the following day, Friday and Saturday, except to the extent that such sound is audible within any dwelling unit not located upon the same property.

Table 2
Davis Municipal Code

Land Use	Time Period	Maximum Noise Level (dBA)
Residential	9 p.m.–7 a.m.	50
	7 a.m.–9 p.m.	55
Commercial/Industrial/Core Commercial	10 p.m.–7 a.m.	55
	7 a.m.–10 p.m.	60
High noise traffic Corridor	Anytime	65

Determination of which land use and time period applies to a noise source, shall be based upon the affected (complainant's) property's land use. Decibel levels shall be measured at the affected (complainant's) property plane at the point closest to the noise source.

Residential Noise Zone is defined as "any parcel with a single-family or multifamily dwelling, including living groups, excluding those in the core commercial area as defined below". (DMC) Based on local standards, we interpret the "maximum noise level" to be based on a 1-hour L_{eq} metric ($L_{eq\ hour}$).

The Municipal Code offers exemptions for certain typical activities which may occur within the City. The exemptions are listed in Article 24.02.040, Special Provisions, and are summarized below:

a) Normal operations of power tools for non-commercial purposes are typically exempted between the hours of 8 AM and 8 PM unless the operation unreasonably disturbs the peace and quiet of any neighborhood.

b) Construction or landscape operations would be exempt during the hours of 7 AM to 7 PM Mondays through Fridays and between the hours of 8 AM and 8 PM Saturdays and Sundays assuming that the operations are authorized by valid city permit or business license, or carried out by employees or contractors of the city and one of the following conditions apply:

    a) No individual piece of equipment shall produce noise level exceeding eighty-three dBA at a distance of twenty-five feet. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to twenty feet from the equipment as possible.

    b) The noise level at any point outside the property plane of the project shall not exceed eighty-six dBA.

c) The provisions of subdivisions (1) and (2) of this subsection shall not be applicable to impact tool and equipment; provided, that such impact tools and equipment shall have intake and exhaust mufflers recommended by manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation, and the pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation. In the absence of manufacturer's recommendations, the director of public works may prescribe such means of accomplishing maximum noise attenuation as he or she may determine to be in the public interest.

d) Construction projects located more than two hundred feet from existing homes may request a special use permit to begin work at 6:00 AM on weekdays from June 15th until September 1st. No percussion type tools (such as ramsets or jackhammers) can be used before 7:00 AM. The permit shall be revoked if any noise complaint is received by the police department.

e) No individual powered blower shall produce a noise level exceeding seventy dBA measured at a distance of fifty feet.

f) No powered blower shall be operated within one hundred feet radius of another powered blower simultaneously.

g) On single-family residential property, the seventy dBA at fifty feet restriction shall not apply if operated for less than ten minutes per occurrence.

h) The City Code also exempts air conditioners, pool pumps, and similar equipment.

i) Work related to public health and safety is exempt from the noise requirements.

j) Safety devices are exempt from the noise requirements.

k) Emergencies are exempt from the noise requirements.

UC Davis 2003 Long Range Development Plan (LRDP) Environmental Impact Report (EIR)

The UC Davis 2003 LRDP EIR includes Table 3 Thresholds of Significance for Noise Evaluations.

Table 3
Thresholds of Significance for Noise Evaluations

Noise Source[a]	Criterion Noise Level[b]	Substantial Increases in Noise Level[b]
Road Traffic and Other Long-Term Sources	65 dBA CNEL	>= 3 dBA if CNEL w/project is >= 65 dBA, >= 5 dBA if CNEL w/project is 50-64 dBA, >= 10 dBA if CNEL w/project is < 50 dBA

Table 3
Thresholds of Significance for Noise Evaluations

Noise Source[a]	Criterion Noise Level[b]	Substantial Increases in Noise Level[b]
Construction (temporary)	80 dBA $L_{eq(8hr)}$[c] daytime 80 dBA $L_{eq(8hr)}$ evening 70 dBA $L_{eq(8hr)}$ nighttime	Not Applicable

a The 2003 LRDP would not substantially increase rail activity; therefore, a significance for rail noise is not included in this table.
b At noise-sensitive land use unless otherwise noted. Noise-sensitive land uses include residential and institutional land uses.
c $L_{eq(8h)}$ is an average measurement over an eight-hour period.

Based on the criteria identified in Appendix G of the CEQA Guidelines, the proposed project would have a significant impact involving noise if it would result in:

1. The 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.
2. The exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.
3. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
4. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

With respect to Significance Criteria #1, and based upon the above information, a significant impact would occur if the project resulted in exterior noise exposure levels at vicinity residences greater than 65 dBA L_{dn} or CNEL, or if the future noise levels at the project site were to exceed 65 dBA L_{dn} or CNEL.

With respect to Significance Criteria #2, the project would not have the potential to generate long-term ground-borne vibration or noise. Over the short-term, the construction efforts are expected to involve demolition, paving, trenching for utilities, foundation work, framing, and finishing. The project construction is not expected to involve the principal sources for vibration generation and related complaints, which are pile driving and blasting. Therefore, construction activities are not expected to be a source for substantial temporary ground-borne vibration.

With respect to Significance Criteria #3, L_{dn} increases of less than 3 dBA are acceptable when “with project” levels are greater than 65 dBA; a significant impact would occur with a greater than 5 dBA CNEL increase where ambient noise levels are between 50 and 64 dBA CNEL with project. For “with project” levels less than 50 dBA, a CNEL increase of up to 10 dBA is acceptable. Based upon documented ambient noise levels for the project site which are above 65 dBA CNEL, a project-related noise level increase of 3 dBA or greater would constitute significant impact.

With respect to Significance Criteria #4, construction is the most common source of temporary increases in the ambient noise levels caused by a proposed project. Table 3 shows that during normal working hours construction noise is limited to 80 dBA $L_{eq(8\ hour)}$; daytime construction noise exceeding 80 dBA $L_{eq(8\ hour)}$ would be considered a significant short-term noise impact. No substantial increase in ambient noise would occur if nighttime $L_{eq(8hr)}$ is calculated to stay below 70 dBA; if nighttime construction noise levels were to exceed 70 dBA $L_{eq(8hr)}$ a significant short-term noise impact would occur.

3 EXISTING CONDITIONS

Dudek visited the proposed project site on November 29 and 30, 2017 to measure ambient sound levels in the vicinity. Christopher Barnobi of Dudek conducted the sound level measurements. Both short-term and long-term measurements were conducted. These measurements were conducted during a fall session.

Long-term (24-hour) unattended noise measurements were conducted at 3 locations near the project site. The long-term measurements were completed using calibrated SoftDB Model Piccolo integrating sound level meters equipped with a Type 2551 0.5-inch pre-polarized condenser microphone. The Piccolo sound level meters meet the ANSI standard for a Type 2 general purpose sound level meter.

Figure 1 shows the measurement locations marked on a site map.

Table 4 summarizes the applicable noise criteria for ambient noise levels in residential areas, and compares the sound level measurement results to these criteria.

Table 4
Noise Criteria and Measured Sound Levels

Map Indicator	Location Description	Noise Levels (dBA)			
		L_{eq}			
		9p–7a	*7a–9p*	*CNEL*	L_{dn}
	Noise Limit Criterion Value	50	55	60	60
LT-1,S	Near Northwestern Corner of Thoreau Hall	53	57	61	60
LT-2,N	Near Wake Forest Apartments	54	59	62	62
LT-3,W	In Park West of the Project site	52	54	59	59

The L_{eq} limits come from the Davis Municipal Code, which also contains exemptions for certain types of noise generation sources. The CNEL and L_{dn} limits come from the City of Davis General Plan.

The measured average daytime (7am–9pm) hourly sound pressure levels (L_{eq}) range from 54 to 59 dBA. With an exterior exposure daytime limit of 55 dBA, the locations near Wake Forest Apartments and near Thoreau Hall currently exceed the daytime noise limits. Nighttime (9pm–7am) exterior exposure limit is 50 dBA, and the three measurement locations show levels already exceeding this limit with results of 52, 53, and 54 dBA. The L_{dn} limit for acceptability is 60 dBA. Measured levels along Wake Forest Drive exceed this criterion. Results are 2 dBA above the acceptable limit near the Wake Forest Apartments.

Russell Boulevard is the major arterial road in the vicinity of the proposed project, although the majority of the road is shielded from the Emerson Hall project site by other intervening buildings. However, as a major roadway noise source in the project vicinity, we include sound level measurements from a previous noise study focused on Webster Hall. Dudek visited the proposed project site on August 1 and 4, 2016 to measure ambient sound levels in the vicinity for a noise study addressing the Webster Hall Replacement Project.

For the Webster Hall Replacement noise study, a short-term noise measurement with manual traffic counts was conducted along Russell Boulevard. Three short-term sound level measurements along with manual traffic counts were also conducted by Dudek for the Emerson Hall Replacement project, on November 29, 2017. The short-term measurements were completed using a calibrated Rion NL-62 sound level meter. This sound level meter meets the American National Standards Institute (ANSI) specifications for a Type 1 precision sound level meter. The sound level meter microphone was positioned at a height of five feet above the ground. Table 5 presents the L_{eq} results from these short-term measurements, along with the respective traffic counts.

Table 5
Measured Traffic Sound Levels

Site [Map Indicator]	Description	Date/Time	Leq[1]	Cars	M[2]	Bus[3]
Russell Blvd	3 ft. from edge of pavement	8/1/2016 3:25 to 3:35 p.m.	66.5 dBA	193	0	0
ST1: Wake Forest Drive	19 ft. from the edit of the nearest driving lane, Northern end of Wake Forest Drive above Project site	11/29/2017 1:30 to 1:40 p.m.	56.9	16	0	0
ST2: Behind Dining Hall/Construction Noise	To the east of the Dining Hall in Parking Lot	11/29/2017 1:48 to 1:58 p.m.	61.6	N/A	N/A	N/A

Table 5
Measured Traffic Sound Levels

Site [Map Indicator]	Description	Date/Time	Leq[1]	Cars	M[2]	Bus[3]
ST3: Plaza in Front of Existing Emerson and Dining Hall	Plaza at entrance of Dining Hall	11/29/2017 2:00 to 2:10 p.m.	54.0	N/A	N/A	N/A

Notes:
1 Equivalent Continuous Sound Level (Time-Average Sound Level)
2 Motorcycles
3 Buses
General Notes: Temperature 86 °F, clear skies, 5 mph southward wind.

Sound levels from roadway traffic in the vicinity of the project site ranged from 54 to 67 dBA L_{eq} with higher levels at locations with unobstructed exposure to the roadway traffic source.

4 TRAFFIC NOISE EXPOSURE

Based upon the LRDP, the exterior noise exposure criterion for residential structures, including apartments and dormitories, is 65 dBA L_{dn}. As discussed in Section 3 (above), 24-hour measured existing traffic noise levels along Wake Forest Drive near the Wake Forest Apartments is within this criterion (measured levels were 62 dBA L_{dn}). This location is a similar distance from Wake Forest Drive as the proposed replacement Emerson Hall. Consequently, traffic noise exposure levels at the replacement Emerson Hall façade would be anticipated to be approximately the same at 62 dBA L_{dn}. This anticipated traffic noise exposure level would also fall within the 70 dBA "conditionally acceptable" limit established in the City of Davis noise element. Assuming standard building shell attenuation, interior noise levels would be expected to comply with the 45 dBA CNEL indoor criterion. Consequently, traffic noise exposure impacts associated with the proposed project would be less than significant.

5 MECHANICAL EQUIPMENT NOISE

Air conditioners, pool pumps, and similar equipment are listed in the exemptions included in the City of Davis Municipal Noise Code. Consequently, there is not a specific noise level limit applicable to project mechanical equipment noise. Nonetheless, mechanical equipment noise generated by the project must be compared to ambient noise levels to determine if a "substantial" increase in the ambient noise levels would occur with the project.

On-site noise sources would include mechanical equipment servicing the new housing. The mechanical equipment that will service the proposed housing will likely be similar to the current equipment servicing the existing housing units. The existing mechanical equipment is placed on the roof of the building, and it is anticipated that the mechanical equipment likewise for the replacement Emerson Hall would be located on the building rooftop. Based on observations during the site visit, the Emerson Hall mechanical equipment did not have distinct or noticeable noise levels at the ground level on the project site, compared with other noise sources such as traffic and mechanical equipment associated with other vicinity buildings.

Mechanical equipment associated with the dining commons to the south is also a contributor to the noise environment at the Project site. The contribution of this dining commons' mechanical equipment to the ambient noise environment was captured in the short term measurements at the ST2 location. The measurement at ST2 also included construction noise from work on the Webster Hall site. But, in general, noise levels associated with mechanical equipment operating in the vicinity of the proposed project are similar to noise levels associated with traffic along adjacent roadways.

In that the proposed mechanical equipment for the replacement Emerson Hall is anticipated to have similar noise generating characteristics as existing Emerson Hall equipment, and because the existing Emerson Hall mechanical equipment noise is not readily discernible from traffic and mechanical equipment noise in the project vicinity, it is not anticipated that operation of mechanical equipment for the replacement Emerson Hall would lead to a substantial increase in ambient noise levels in the project vicinity.

6 CONSTRUCTION NOISE ASSESSMENT

This section discusses the noise levels from construction of the project at nearby sensitive receptors. Construction of the project would generate noise that could expose nearby receptors to elevated noise levels that may disrupt communication or routine activities. Noise generated by project-related construction activities would be a function of:

- the noise levels generated by individual pieces of construction equipment,
- the type and amount of equipment operating at any given time, the timing and duration of construction activities,
- the proximity of nearby sensitive land uses,
- and the presence or lack of shielding at these sensitive land uses.

Construction noise levels would vary on a day-to-day basis during each phase of construction, depending on the specific task being completed. Each construction phase would require a different combination of construction equipment to complete the task. Construction noise would primarily result from demolition, operation of heavy construction equipment, and the arrival and departure of heavy-duty trucks.

Development activities for project construction would generally involve the following phases: demolition, site preparation, grading, building construction, paving, and architectural coatings. Construction equipment with substantially high noise-generation characteristics (such as pile drivers, rock drills, blasting equipment) would not be necessary for development of the project.

Construction noise is difficult to quantify because of the many variables involved, including the specific equipment types, size of equipment used, percentage of usage or equipment operation, condition of each piece of equipment, and number of pieces of equipment that will actually operate on the site.

Table 6 summarizes noise levels for typical construction equipment that might be used for this project. The noise values represent maximum noise generation, or full-power operation of the equipment.

Table 6
Construction Equipment Noise Emission Levels

Equipment	Typical Sound Level (dBA) 50 Feet from Source
Air compressor	81
Backhoe	80
Compactor	82
Concrete mixer	85
Concrete pump	82
Concrete vibrator	76
Crane, derrick	88
Crane, mobile	83
Dozer	85
Generator	81
Grader	85
Impact wrench	85
Jackhammer	88
Loader	85
Paver	89
Pneumatic tool	85
Pump	76
Roller	74
Saw	76
Truck	88

Source: Transit Noise and Vibration Impact Assessment, May 2006, Federal Transit Administration, FTA-VA-90-1003-06.

Noise levels generated by construction equipment (or by any point source outdoors) decrease at a rate of approximately 6 dBA per doubling of distance from the source. Therefore, if a particular construction activity generated average noise levels of 88 dBA at 50 feet, the L_{eq} would be 82 dBA at 100 feet, 76 dBA at 200 feet, 70 dBA at 400 feet, and so on. Intervening structures that block the line of sight, such as buildings, would further decrease the resultant noise level by a minimum of 5 dBA. Conversely, halving of the distance so a source was 25 feet away from a receptor will add 6 dBA to the source levels listed in the table.

Some equipment in the list will violate the Davis Municipal code exemption listed in Article 24.02.040 of 83 dBA at 25 feet. This limit does not apply to impact tools, given that intake and exhaust mufflers recommended by the manufacturers and approved by the director of public works accomplish maximum noise attenuation.

Table 7 summarizes the distances to receptors used in the analysis of construction noise levels. These distances are from the edge of the project site to the sensitive receiver locations.

Table 7
Distances to Receivers

Nearby Noise Sensitive Receiver	Distance from Site
Thoreau Hall	150 feet
Webster Hall	150 feet
Wake Forest Apartments	100 feet
University Court Apartments	115 feet
Dining Commons	10 feet

The Dining Commons is not considered a sensitive receiver because it is not expected to house residences. The other two residential buildings in the project vicinity are greater than 50 feet, and will therefore experience noise levels lower than those shown in Table 6, from individual pieces of equipment.

With the noise sources identified in Table 6 and distances in Table 7, a noise analysis was performed using a model developed under by the Federal Highway Administration (FHWA) called the Roadway Construction Noise Model (RCNM). This construction noise model includes representative sound levels (like those shown in Table 6) for the most common types of construction equipment, and default duty cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. The duty cycle factors represent the percentage of time that the equipment would be operating at full power. Vehicles and equipment anticipated during construction were input into RCNM to calculate noise levels at the nearest sensitive receptors to the construction activities during each phase

(FHWA RCNM User's Guide 2006). Table 8 presents the summary results of the construction noise analysis for individual pieces of equipment. Refer to Attachment B for RCNM model inputs and results.

Table 8
Construction Noise at Receivers

Case Description:	$L_{eq(8hr)}$ (dBA)				
	R1 - Thoreau Hall 150'	*R2 - Webster Hall 150'*	*R3 - Wake Forest Apt. 100'*	*R4 - University Court Apt. 115'*	*R5 - Dining Commons 10'*
Demolition	75	75	79	78	98
Site Preparation	74	74	79	78	98
Grading	74	74	79	78	98
Paving	72	72	75	74	97
Building Construction	72	72	75	74	93
Architectural Coating	72	72	75	74	88

Temporary noise from construction would be readily audible at the nearby sensitive receptors and at times could represent a substantial temporary increase. Based on our construction noise modeling, the dining hall to the south will experience construction noise levels above the 80 dBA $L_{eq(8hr)}$ significance criteria for daytime and evening. The path between the dinning commons and the project site is the area with high predicted construction noise levels.

While daytime construction noise levels were determined to be potentially significant, evening or nighttime construction activity may also result in short-term nuisance. With lower ambient noise levels in the evening and at night, the construction noise would be more noticeable in these periods, and would also have a greater potential to be disruptive for residences in the project vicinity. Consequently, construction activity in the period between 10 PM and 7 AM would result in a potentially significant short-term noise impact. This potentially significant impact would be avoided with adherence to required mitigation measures from the LRDP EIR (2003), which restricts loud construction activity from 7:30 a.m. to 7:30 p.m. Mitigation measures in the LRDP EIR (2003) that are applicable to the proposed project are presented in the following Section.

7 MITIGATION

The above analysis concludes the project would have short-term construction-related significant noise impacts upon vicinity noise-sensitive land uses. Consequently, the following mitigation measure- from the UC Davis LRDP would be required to be implemented during project construction.

Short-Term Construction Mitigation Measure

The following mitigation measure, 4.10-1, is included in the LRDP EIR (2003) in order to address noise and vibration from construction activities, and must be incorporated into the proposed project.

Prior to initiation of construction, the campus shall approve a construction noise mitigation program including but not limited to the following:

- Construction equipment shall be properly outfitted and maintained with feasible noise-reduction devices to minimize construction-generated noise.
- Stationary noise sources such as generators or pumps shall be located 100 feet away from noise-sensitive land uses as feasible.
- Laydown and construction vehicles staging areas shall be located 100 feet away from noise-sensitive land uses as feasible.
- Whenever possible, academic, administrative, and residential areas that will be subject to construction noise shall be informed a week before the start of each construction project.
- 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.
- 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 breaks, Christmas break, Spring break, or Summer break.
- Loud construction activity within 100 feet of a residential or academic building shall be restricted to occur between 7:30 AM and 7:30 PM.

Additionally, the measures below are recommended in order to further reduce the potential for annoyance from construction noise and may be incorporated into the mitigation noise program described in Measure 4.10-1 as feasible:

1. Electrically-powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.
2. Construction site and access road speed limits shall be established and enforced during the construction period.
3. The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.

4. The on-site construction supervisor and "disturbance coordinator" shall have the responsibility and authority to receive and resolve noise complaints. A clear appeal process to the owner shall be established prior to construction commencement that will allow for resolution of noise problems that cannot be immediately solved by the site supervisor.
5. Equipment should not be left idling unless necessary.
6. The project contractor shall, to the extent feasible, schedule construction activities to avoid the simultaneous operation of construction equipment so as to minimize noise levels resulting from operating several pieces of high noise level emitting equipment.
7. Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow surrounding property owners to contact the job superintendent if necessary. In the event the University receives a complaint, appropriate corrective actions shall be implemented and a report of the action provided to the reporting party.

Implementation of the LRDP Mitigation Measure would reduce the impact of short-term construction noise to a less-than-significant level.

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SOURCE: USDA NAIP Imagery (2016); Yolo County GIS

DUDEK

0 100 200 Feet

FIGURE 1

Noise Measurement Locations

UC Davis Emerson Hall Project

ATTACHMENT A

Acoustic Definitions and Discussion

ATTACHMENT A
Acoustic Definitions and Discussion

ACOUSTIC TERMINOLOGY AND DEFINITIONS

Term	Definition
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
A-Weighted Sound Level	**dBA** is the sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Community Noise Equivalent Level	**CNEL** is the A-weighted equivalent continuous sound exposure (CNEL) level for a 24-hour period with a ten dB adjustment added to sound levels occurring during nighttime hours (10 PM to 7 AM) and a five dB adjustment added to the sound levels occurring during the evening hours (7 PM to 10 PM).
Day/Night Noise Equivalent Level	**L_{DN}** (or DNL) is the A-weighted equivalent continuous sound exposure level for a 24-hour period with a ten dB adjustment added to sound levels occurring during nighttime hours (10 PM to 7 AM).
Decibel	**dB** is the unit for measuring sound pressure level, equal to 10 times the logarithm to the base 10 of the ratio of the measured sound pressure squared to a reference pressure, which is 20 micro-Pascal.
Equivalent Sound Level	**L_{EQ}** is the sound level corresponding to a steady state sound level and containing the same total energy as a time varying signal over a given sample period. TAV is designed to average all of the loud and quiet sound levels occurring over a specific time.

SOUND AND VIBRATION BACKGROUND

Vibrations, traveling as waves through air from a source, exert pressure perceived by the human ear as sound. Sound pressure level (referred to as sound level) is measured on a logarithmic scale in decibels (dB) that represent the fluctuation of air pressure above and below atmospheric pressure. Frequency, or pitch, is a physical characteristic of sound and is expressed in units of cycles per second or hertz (Hz). The normal frequency range of hearing for most people extends from about 20 to 20,000 Hz. The human ear is more sensitive to middle and high frequencies (about 1,000 to 4,000 Hz), especially when background noise levels are lower. As noise levels get louder, the human ear starts to hear the frequency spectrum more evenly. To accommodate for this phenomenon, a weighting system to evaluate how loud a noise level is to a human was developed. The frequency weighting called "A" weighting is typically used for quieter noise levels which de-emphasizes the low frequency components of the sound in a manner similar to the response of a human ear. A-weighted sound level is referenced with units of dBA.

Since sound is measured on a logarithmic scale, a doubling of sound energy results in a 3 dBA increase in the noise level. Changes in a community noise level of less than 3 dBA are not typically noticed by the human ear (Caltrans 1980). Changes from 3 to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise. A 5 dBA increase is readily noticeable. The human ear perceives a 10 dBA increase in sound level as a doubling of the sound level (i.e., 65 dBA sounds twice as loud as 55 dBA to a human ear).

An individual's noise exposure occurs over a period of time; however, instantaneous noise level is a measure of noise at a given instant in time. The equivalent noise level L_{eq}, also referred to as the average sound level, is a single-number representing the fluctuating sound level in decibels (dB) over a specified period of time. It is a sound-energy average of the fluctuating level and is equal to a constant unchanging sound of that dB level. Community noise sources vary. Often a relatively stable background or ambient noise environment can still be assessed based on long term measurements.

Noise levels are generally higher during the daytime and early evening when traffic (including airplanes), commercial, and industrial activity is the greatest. However, noise sources experienced during nighttime hours when background levels are generally lower can be potentially more conspicuous and irritating to the receiver. In order to evaluate noise in a way that considers periodic fluctuations experienced throughout the day and night, a concept termed "community noise equivalent level" (CNEL) was developed, The CNEL scale represents a time-weighted 24-hour average noise level based on the A-weighted sound level. CNEL accounts for the increased noise sensitivity during the evening hours (7 p.m. to 10 p.m.) and nighttime hours (10 p.m. to 7 a.m.) by adding five dB to the average sound levels occurring during the evening hours and 10 dB to the sound levels occurring during nighttime hours.

ATTACHMENT B

RCNM Model Inputs and Results

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/13/2017
Case Description: Emmerson Hall_Architectural Coating

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Thoreau Hall 150'	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	150	0

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax
Compressor (air)		71	63	N/A	N/A	N/A	N/A	N/A
	Total	71.1	71.8	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Webster Hall 150'	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	150	0

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax
Compressor (air)		71	63	N/A	N/A	N/A	N/A	N/A
	Total	71.1	71.8	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Wake Forest Apt. 100'	Residential	65	60	55

Description		Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)		No	40		77.7	100	0

		Results							
		Calculated (dBA)		Noise Limits (dBA)					
				Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	
Compressor (air)		74.5	66.6	N/A	N/A	N/A	N/A	N/A	
	Total	74.6	75.3	N/A	N/A	N/A	N/A	N/A	

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
University Court Apt. 115'	Residential	65	60	55

Description		Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)		No	40		77.7	115	0

		Results							
		Calculated (dBA)		Noise Limits (dBA)					
				Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	
Compressor (air)		73.3	65.4	N/A	N/A	N/A	N/A	N/A	
	Total	73.4	74.1	N/A	N/A	N/A	N/A	N/A	

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Dining Commons 10'	Residential	65	60	55

Description		Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)		No	40		77.7	10	0

Results

Calculated (dBA) Noise Limits (dBA)

				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Compressor (air)		91.6	87.7	N/A	N/A	N/A	N/A	N/A
	Total	91.6	87.7	N/A	N/A	N/A	N/A	N/A
		*Calculated Lmax is the Loudest value.						

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/13/2017
Case Description: Emmerson Hall_Building Construction

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Thoreau Hall 150'	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Crane	No	16		80.6	150	0
Man Lift	No	20		74.7	150	0
Generator	No	50		80.6	150	0
Backhoe	No	40		77.6	150	0
Welder / Torch	No	40		74	150	0
Welder / Torch	No	40		74	150	0
Welder / Torch	No	40		74	150	0

				Results				
		Calculated (dBA)			Noise Limits (dBA)			
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Crane		71	63	N/A	N/A	N/A	N/A	N/A
Man Lift		65.2	58.2	N/A	N/A	N/A	N/A	N/A
Generator		71.1	68.1	N/A	N/A	N/A	N/A	N/A
Backhoe		68	64	N/A	N/A	N/A	N/A	N/A
Welder / Torch		64.5	60.5	N/A	N/A	N/A	N/A	N/A
Welder / Torch		64.5	60.5	N/A	N/A	N/A	N/A	N/A
Welder / Torch		64.5	60.5	N/A	N/A	N/A	N/A	N/A
	Total	71.1	71.8	N/A	N/A	N/A	N/A	N/A
		*Calculated Lmax is the Loudest value.						

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Webster Hall 150'	Residential	65	60	55

Description		Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane		No	16		80.6	150	0
Man Lift		No	20		74.7	150	0
Generator		No	50		80.6	150	0
Backhoe		No	40		77.6	150	0
Welder / Torch		No	40		74	150	0
Welder / Torch		No	40		74	150	0
Welder / Torch		No	40		74	150	0

Results

		Calculated (dBA)		Noise Limits (dBA)				
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Crane		71	63	N/A	N/A	N/A	N/A	N/A
Man Lift		65.2	58.2	N/A	N/A	N/A	N/A	N/A
Generator		71.1	68.1	N/A	N/A	N/A	N/A	N/A
Backhoe		68	64	N/A	N/A	N/A	N/A	N/A
Welder / Torch		64.5	60.5	N/A	N/A	N/A	N/A	N/A
Welder / Torch		64.5	60.5	N/A	N/A	N/A	N/A	N/A
Welder / Torch		64.5	60.5	N/A	N/A	N/A	N/A	N/A
	Total	71.1	71.8	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Wake Forest Apt. 100'	Residential	65	60	55

Description		Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane		No	16		80.6	100	0
Man Lift		No	20		74.7	100	0
Generator		No	50		80.6	100	0
Backhoe		No	40		77.6	100	0
Welder / Torch		No	40		74	100	0
Welder / Torch		No	40		74	100	0
Welder / Torch		No	40		74	100	0

Results

		Calculated (dBA)		Noise Limits (dBA)				
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax

Crane		74.5	66.6	N/A	N/A	N/A	N/A	N/A
Man Lift		68.7	61.7	N/A	N/A	N/A	N/A	N/A
Generator		74.6	71.6	N/A	N/A	N/A	N/A	N/A
Backhoe		71.5	67.6	N/A	N/A	N/A	N/A	N/A
Welder / Torch		68	64	N/A	N/A	N/A	N/A	N/A
Welder / Torch		68	64	N/A	N/A	N/A	N/A	N/A
Welder / Torch		68	64	N/A	N/A	N/A	N/A	N/A
	Total	74.6	75.3	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
University Court Apt. 115'	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	115	0
Man Lift	No	20		74.7	115	0
Generator	No	50		80.6	115	0
Backhoe	No	40		77.6	115	0
Welder / Torch	No	40		74	115	0
Welder / Torch	No	40		74	115	0
Welder / Torch	No	40		74	115	0

Results

		Calculated (dBA)		Noise Limits (dBA)				
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Crane		73.3	65.4	N/A	N/A	N/A	N/A	N/A
Man Lift		67.5	60.5	N/A	N/A	N/A	N/A	N/A
Generator		73.4	70.4	N/A	N/A	N/A	N/A	N/A
Backhoe		70.3	66.3	N/A	N/A	N/A	N/A	N/A
Welder / Torch		66.8	62.8	N/A	N/A	N/A	N/A	N/A
Welder / Torch		66.8	62.8	N/A	N/A	N/A	N/A	N/A
Welder / Torch		66.8	62.8	N/A	N/A	N/A	N/A	N/A
	Total	73.4	74.1	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Dining Commons 10'	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	10	0
Man Lift	No	20		74.7	10	0
Generator	No	50		80.6	10	0
Backhoe	No	40		77.6	35	0
Welder / Torch	No	40		74	35	0
Welder / Torch	No	40		74	35	0
Welder / Torch	No	40		74	60	0

Results

		Calculated (dBA)		Noise Limits (dBA)						
				Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	
Crane		94.5	86.6	N/A	N/A	N/A	N/A	N/A	
Man Lift		88.7	81.7	N/A	N/A	N/A	N/A	N/A	
Generator		94.6	91.6	N/A	N/A	N/A	N/A	N/A	
Backhoe		80.7	76.7	N/A	N/A	N/A	N/A	N/A	
Welder / Torch		77.1	73.1	N/A	N/A	N/A	N/A	N/A	
Welder / Torch		77.1	73.1	N/A	N/A	N/A	N/A	N/A	
Welder / Torch		72.4	68.4	N/A	N/A	N/A	N/A	N/A	
	Total	94.6	93.3	N/A	N/A	N/A	N/A	N/A	

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/13/2017
Case Description: Emmerson Hall_Demolition

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Thoreau Hall 150'	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	150	0
Dozer	No	40		81.7	150	0
Backhoe	No	40		77.6	150	0
Backhoe	No	40		77.6	150	0
Backhoe	No	40		77.6	150	0

Results

Calculated (dBA) Noise Limits (dBA)

				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Concrete Saw		80	73	N/A	N/A	N/A	N/A	N/A
Dozer		72.1	68.1	N/A	N/A	N/A	N/A	N/A
Backhoe		68	64	N/A	N/A	N/A	N/A	N/A
Backhoe		68	64	N/A	N/A	N/A	N/A	N/A
Backhoe		68	64	N/A	N/A	N/A	N/A	N/A
	Total	80	75.4	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Webster Hall 150'	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw	No	20		89.6	150	0
Dozer	No	40		81.7	150	0
Backhoe	No	40		77.6	150	0
Backhoe	No	40		77.6	150	0
Backhoe	No	40		77.6	150	0

				Results				
		Calculated (dBA)			Noise Limits (dBA)			
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Concrete Saw		80	73	N/A	N/A	N/A	N/A	N/A
Dozer		72.1	68.1	N/A	N/A	N/A	N/A	N/A
Backhoe		68	64	N/A	N/A	N/A	N/A	N/A
Backhoe		68	64	N/A	N/A	N/A	N/A	N/A
Backhoe		68	64	N/A	N/A	N/A	N/A	N/A
	Total	80	75.4	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Wake Forest Apt. 100'	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw	No	20		89.6	100	0

Dozer		No	40		81.7	100	0	
Backhoe		No	40		77.6	100	0	
Backhoe		No	40		77.6	100	0	
Backhoe		No	40		77.6	100	0	

				Results				
		Calculated (dBA)			Noise Limits (dBA)			
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Concrete Saw		83.6	76.6	N/A	N/A	N/A	N/A	N/A
Dozer		75.6	71.7	N/A	N/A	N/A	N/A	N/A
Backhoe		71.5	67.6	N/A	N/A	N/A	N/A	N/A
Backhoe		71.5	67.6	N/A	N/A	N/A	N/A	N/A
Backhoe		71.5	67.6	N/A	N/A	N/A	N/A	N/A
	Total	83.6	78.9	N/A	N/A	N/A	N/A	N/A
		*Calculated Lmax is the Loudest value.						

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
University Court Apt. 115'	Residential	65	60	55

				Equipment			
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw		No	20		89.6	115	0
Dozer		No	40		81.7	115	0
Backhoe		No	40		77.6	115	0
Backhoe		No	40		77.6	115	0
Backhoe		No	40		77.6	115	0

				Results				
		Calculated (dBA)			Noise Limits (dBA)			
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Concrete Saw		82.3	75.4	N/A	N/A	N/A	N/A	N/A
Dozer		74.4	70.5	N/A	N/A	N/A	N/A	N/A
Backhoe		70.3	66.3	N/A	N/A	N/A	N/A	N/A
Backhoe		70.3	66.3	N/A	N/A	N/A	N/A	N/A
Backhoe		70.3	66.3	N/A	N/A	N/A	N/A	N/A
	Total	82.3	77.7	N/A	N/A	N/A	N/A	N/A
		*Calculated Lmax is the Loudest value.						

---- Receptor #5 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night

Dining Commons 10'	Residential	65	60	55	

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	10	0
Dozer	No	40		81.7	10	0
Backhoe	No	40		77.6	10	0
Backhoe	No	40		77.6	35	0
Backhoe	No	40		77.6	35	0

Results

		Calculated (dBA)		Noise Limits (dBA)				
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Concrete Saw		103.6	96.6	N/A	N/A	N/A	N/A	N/A
Dozer		95.6	91.7	N/A	N/A	N/A	N/A	N/A
Backhoe		91.5	87.6	N/A	N/A	N/A	N/A	N/A
Backhoe		80.7	76.7	N/A	N/A	N/A	N/A	N/A
Backhoe		80.7	76.7	N/A	N/A	N/A	N/A	N/A
	Total	103.6	98.2	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/13/2017
Case Description: Emmerson Hall_Grading

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Thoreau Hall 150'	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		150	0
Dozer	No	40		81.7	150	0
Backhoe	No	40		77.6	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)				
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax

Grader		75.5	71.5	N/A	N/A	N/A	N/A	N/A
Dozer		72.1	68.1	N/A	N/A	N/A	N/A	N/A
Backhoe		68	64	N/A	N/A	N/A	N/A	N/A
	Total	75.5	73.6	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Webster Hall 150'	Residential	65	60	55

				Equipment			
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Grader		No	40	85		150	0
Dozer		No	40		81.7	150	0
Backhoe		No	40		77.6	150	0

				Results				
		Calculated (dBA)			Noise Limits (dBA)			
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Grader		75.5	71.5	N/A	N/A	N/A	N/A	N/A
Dozer		72.1	68.1	N/A	N/A	N/A	N/A	N/A
Backhoe		68	64	N/A	N/A	N/A	N/A	N/A
	Total	75.5	73.6	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Wake Forest Apt. 100'	Residential	65	60	55

				Equipment			
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Grader		No	40	85		100	0
Dozer		No	40		81.7	100	0
Backhoe		No	40		77.6	100	0

				Results				
		Calculated (dBA)			Noise Limits (dBA)			
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Grader		83.6	76.6	N/A	N/A	N/A	N/A	N/A

Dozer		75.6	71.7	N/A	N/A	N/A	N/A	N/A
Backhoe		71.5	67.6	N/A	N/A	N/A	N/A	N/A
	Total	83.6	78.9	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
University Court Apt. 115'	Residential	65	60	55

				Equipment			
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Grader		No	40	85		115	0
Dozer		No	40		81.7	115	0
Backhoe		No	40		77.6	115	0

				Results				
		Calculated (dBA)			Noise Limits (dBA)			
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Grader		82.3	75.4	N/A	N/A	N/A	N/A	N/A
Dozer		74.4	70.5	N/A	N/A	N/A	N/A	N/A
Backhoe		70.3	66.3	N/A	N/A	N/A	N/A	N/A
	Total	82.3	77.7	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Dining Commons 10'	Residential	65	60	55

				Equipment			
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Grader		No	40	85		10	0
Dozer		No	40		81.7	10	0
Backhoe		No	40		77.6	10	0

				Results				
		Calculated (dBA)			Noise Limits (dBA)			
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Grader		103.6	96.6	N/A	N/A	N/A	N/A	N/A
Dozer		95.6	91.7	N/A	N/A	N/A	N/A	N/A

Backhoe		91.5	87.6	N/A	N/A	N/A	N/A	N/A
	Total	103.6	98.2	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/13/2017

Case Description: Emmerson Hall_Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Thoreau Hall 150'	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	150	0
Paver	No	50		77.2	150	0
All Other Equipment > 5 HP	No	50	85		150	0
Roller	No	20		80	150	0
Backhoe	No	40		77.6	150	0

Results

		Calculated (dBA)		Noise Limits (dBA)				
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Concrete Mixer Truck		71	63	N/A	N/A	N/A	N/A	N/A
Paver		65.2	58.2	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		71.1	68.1	N/A	N/A	N/A	N/A	N/A
Roller		68	64	N/A	N/A	N/A	N/A	N/A
Backhoe		64.5	60.5	N/A	N/A	N/A	N/A	N/A
	Total	71.1	71.8	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Webster Hall 150'	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	150	0
Paver	No	50		77.2	150	0

All Other Equipment > 5 HP		No	50	85		150	0	
Roller		No	20		80	150	0	
Backhoe		No	40		77.6	150	0	

				Results				
		Calculated (dBA)			Noise Limits (dBA)			
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Concrete Mixer Truck		71	63	N/A	N/A	N/A	N/A	N/A
Paver		65.2	58.2	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		71.1	68.1	N/A	N/A	N/A	N/A	N/A
Roller		68	64	N/A	N/A	N/A	N/A	N/A
Backhoe		64.5	60.5	N/A	N/A	N/A	N/A	N/A
	Total	71.1	71.8	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Wake Forest Apt. 100'	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Mixer Truck	No	40		78.8	100	0
Paver	No	50		77.2	100	0
All Other Equipment > 5 HP	No	50	85		100	0
Roller	No	20		80	100	0
Backhoe	No	40		77.6	100	0

				Results				
		Calculated (dBA)			Noise Limits (dBA)			
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Concrete Mixer Truck		74.5	66.6	N/A	N/A	N/A	N/A	N/A
Paver		68.7	61.7	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		74.6	71.6	N/A	N/A	N/A	N/A	N/A
Roller		71.5	67.6	N/A	N/A	N/A	N/A	N/A
Backhoe		68	64	N/A	N/A	N/A	N/A	N/A
	Total	74.6	75.3	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
University Court Apt. 115'	Residential	65	60	55

Description		Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck		No	40		78.8	115	0
Paver		No	50		77.2	115	0
All Other Equipment > 5 HP		No	50	85		115	0
Roller		No	20		80	115	0
Backhoe		No	40		77.6	115	0

Results

		Calculated (dBA)		Noise Limits (dBA)				
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Concrete Mixer Truck		73.3	65.4	N/A	N/A	N/A	N/A	N/A
Paver		67.5	60.5	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		73.4	70.4	N/A	N/A	N/A	N/A	N/A
Roller		70.3	66.3	N/A	N/A	N/A	N/A	N/A
Backhoe		66.8	62.8	N/A	N/A	N/A	N/A	N/A
	Total	73.4	74.1	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Dining Commons 10'	Residential	65	60	55

Description		Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck		No	40		78.8	10	0
Paver		No	50		77.2	10	0
All Other Equipment > 5 HP		No	50	85		10	0
Roller		No	20		80	35	0
Backhoe		No	40		77.6	35	0

Results

		Calculated (dBA)		Noise Limits (dBA)				
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Concrete Mixer Truck		92.8	88.8	N/A	N/A	N/A	N/A	N/A
Paver		91.2	88.2	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		99	96	N/A	N/A	N/A	N/A	N/A
Roller		83.1	76.1	N/A	N/A	N/A	N/A	N/A
Backhoe		80.7	76.7	N/A	N/A	N/A	N/A	N/A

Total	99	97.4	N/A	N/A	N/A	N/A	N/A	

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/13/2017
Case Description: Emmerson Hall_Site Preparation

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Thoreau Hall 150'	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		150	0
Dozer	No	40		81.7	150	0
Backhoe	No	40		77.6	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)				
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Grader	75.5	71.5	N/A	N/A	N/A	N/A	N/A
Dozer	72.1	68.1	N/A	N/A	N/A	N/A	N/A
Backhoe	68	64	N/A	N/A	N/A	N/A	N/A
Total	75.5	73.6	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Webster Hall 150'	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		150	0
Dozer	No	40		81.7	150	0
Backhoe	No	40		77.6	150	0

Results

Calculated (dBA) Noise Limits (dBA)

				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Grader		75.5	71.5	N/A	N/A	N/A	N/A	N/A
Dozer		72.1	68.1	N/A	N/A	N/A	N/A	N/A
Backhoe		68	64	N/A	N/A	N/A	N/A	N/A
	Total	75.5	73.6	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Wake Forest Apt. 100'	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Grader	No	40	85		100	0
Dozer	No	40		81.7	100	0
Backhoe	No	40		77.6	100	0

				Results				
		Calculated (dBA)			Noise Limits (dBA)			
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Grader		83.6	76.6	N/A	N/A	N/A	N/A	N/A
Dozer		75.6	71.7	N/A	N/A	N/A	N/A	N/A
Backhoe		71.5	67.6	N/A	N/A	N/A	N/A	N/A
	Total	83.6	78.9	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
University Court Apt. 115'	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Grader	No	40	85		115	0
Dozer	No	40		81.7	115	0
Backhoe	No	40		77.6	115	0

				Results				
		Calculated (dBA)			Noise Limits (dBA)			
				Day		Evening		Night

Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Grader		82.3	75.4	N/A	N/A	N/A	N/A	N/A
Dozer		74.4	70.5	N/A	N/A	N/A	N/A	N/A
Backhoe		70.3	66.3	N/A	N/A	N/A	N/A	N/A
	Total	82.3	77.7	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Dining Commons 10'	Residential	65	60	55

Description		Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader		No	40	85		10	0
Dozer		No	40		81.7	10	0
Backhoe		No	40		77.6	10	0

Results

		Calculated (dBA)			Noise Limits (dBA)			
				Day		Evening		Night
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Grader		103.6	96.6	N/A	N/A	N/A	N/A	N/A
Dozer		95.6	91.7	N/A	N/A	N/A	N/A	N/A
Backhoe		91.5	87.6	N/A	N/A	N/A	N/A	N/A
	Total	103.6	98.2	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

APPENDIX E
COMMENTS AND RESPONSES TO COMMENTS

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COMMENTS AND RESPONSES TO COMMENTS

On January 22, 2018, the UC Davis campus circulated for public review an Initial Study/Proposed Negative Declaration (IS/Proposed ND) for the Emerson Hall Replacement Project ("Project"). As required by Section 15073 of the California Environmental Quality Act (CEQA) Guidelines, the IS/Proposed ND was circulated for a minimum of 30 days. The comment period closed on February 20, 2018. UC Davis received one comment letter on the IS/Proposed ND. Section 15074(b) of the CEQA Guidelines requires the decision-making body to consider the IS/Proposed ND and comments received on it prior to considering the project for approval. Responses to comments are not required by CEQA, although responses may be provided at the discretion of the lead agency. UC Davis campus has prepared responses to comments received on the IS/Proposed ND.

Comments were received during the public review period from the following:

- Letter A: Central Valley Regional Water Quality Control Board (CVRWQCB)

No comments were received from any members of the public.

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Central Valley Regional Water Quality Control Board

12 February 2018

Matt Dulcich
University of California Davis
One Shields Avenue
436 Mrak Hall
Davis, CA 95616

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91 7199 9991 7035 8419 4164

COMMENTS TO REQUEST FOR REVIEW FOR THE NEGATIVE DECLARATION, EMERSON HALL REPLACEMENT PROJECT, SCH# 2018012032, YOLO COUNTY

Pursuant to the State Clearinghouse's 22 January 2018 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Negative Declaration* for the Emerson Hall Replacement Project, located in Yolo County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Policy is available on page IV-15.01 at:
http://www.waterboards.ca.gov/centralvalleywater_issues/basin_plans/sacsjr.pdf

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Caltrans Phase I MS4 Permit, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/caltrans.shtml.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.sht ml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification
If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance (i.e., discharge of dredge or fill material) of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements (WDRs)

Discharges to Waters of the State

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

Land Disposal of Dredge Material

If the project will involve dredging, Water Quality Certification for the dredging activity and Waste Discharge Requirements for the land disposal may be needed.

Local Agency Oversite

Pursuant to the State Water Board's Onsite Wastewater Treatment Systems Policy (OWTS Policy), the regulation of septic tank and leach field systems may be regulated under the local agency's management program in lieu of WDRs. A county environmental health department may permit septic tank and leach field systems designed for less than 10,000 gpd. For more information on septic system regulations, visit the Central Valley Water Board's website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/owts/sb_owts_policy.pdf

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Dewatering Permit
If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture
If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/app_approval/index.shtml; or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100**. Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently $1,084 + $6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the

Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of the waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit.

For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit3.shtml

If you háve questions regarding these comments, please contact me at (916) 464-4644 or Stephanie.Tadlock@waterboards.ca.gov.

Stephanie Tadlock

Stephanie Tadlock
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

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Letter A: Central Valley Regional Water Quality Control Board (CVRWQCB), Stephanie Tadlock, Environmental Scientist, dated February 12, 2018

Response A:

The first section of the comment letter describes the regulatory setting for the CVRWQCB comments on the Project. The regulatory setting includes the Basin Plan and the Antidegredation Policy for water quality. The letter notes that the environmental document should consider impacts to both surface and groundwater quality. The Initial Study assesses these impacts in Section 6.9 (page 98 – 102) and finds that the impacts would be less than significant.

The second section of the letter describes a number of permits that may be required for the Project. All required permits or permit modifications will be obtained from state and local agencies, as required for the construction and operation of the Emerson Hall Replacement Project.

For discharges associated with the construction phase of the Project, the Project's construction contractor will apply for coverage under the Construction General Permit.

The State Water Resources Control Board (State Water Board) issued the *Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems* (Phase II Small MS4 General Permit) in 2003, which was amended in 2013. The Phase II MS4 General Permit requires that MS4s in this category develop and implement a Stormwater Management Program to control stormwater pollution. The City of Davis implements its Stormwater Management Program per the *City of Davis Stormwater Phase II General Permit, Development Standards Guidance Document* (July 2015). The impervious surfaces on the Project site would decrease compared to existing conditions. Furthermore, through the Project design process and inclusion of LEED design features to improve stormwater infiltration, the Project is expected to include stormwater detention and infiltration facilities that would decrease the overall storm water flows and would reduce the pollutants entering the City's stormwater system.

There are no wetlands or other waters on the Project site. Due to depth to groundwater, no dewatering is anticipated. Therefore, none of the other permits listed by the CVRWQCB would apply to the Project.

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