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BAINER HALL AND CHEMISTRY COMPLEX ADDITION AND RENOVATION

Addendum to the
UC Davis 2018 Long Range Development Plan EIR

State Clearinghouse No. 2017012008

Prepared By:

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TABLE OF CONTENTS

Exhibits

Tables

LIST OF ABBREVIATIONS

2018 LRDP	2018 Long Range Development Plan
AB	Assembly Bill
ASF	assignable square feet
BMP	best management practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CPEC	California Post-Secondary Education Commission
DJUSD	Davis Joint Unified School District
EH&S	Office of Environmental Health and Safety
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
GSF	gross square feet
HCP	habitat conservation plan
HVAC	heating, ventilation, and air condition
I-80	Interstate Highway 80
IS	initial study
LEED	Leadership in Energy and Environmental Design
LOS	level of service
MND	mitigated negative declaration
MS4	Municipal Separate Storm Sewer System
MSHCP	multi-species habitat conservation plan
NAAQS	National Ambient Air Quality Standards
NCCP	Natural Community Conservation Plan
ND	negative declaration
NO_2	nitrogen dioxide

NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
OEHHA	Office of Environmental Health Hazard Assessment
PCB	polychlorinated biphenyl
PM_{10}	particulate matter with an aerodynamic diameter of 10 microns or smaller
$PM_{2.5}$	particulate matter with an aerodynamic diameter of 2.5 microns or smaller
ROG	reactive organic gas
SB	Senate Bill
SO_2	sulfur dioxide
sf	square feet
SR	State Route
SVAB	Sacramento Valley Air Basin
SWPPP	stormwater pollution prevention plan
TAC	toxic air contaminant
the Program EIR	2018 LRDP EIR
UC	University of California
VMT	vehicle miles traveled
WAPA	Western Area Power Association
WDR	waste discharge requirement
YSAQMD	Yolo-Solano Air Quality Management District

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1 PROJECT INFORMATION

Project title:	Bainer Hall and Chemistry Complex Addition and Renovation Project
Project location:	University of California, Davis, Yolo County
Lead agency's name and address:	The Regents of the University of California 1111 Franklin Street Oakland, CA 94607
Contact person:	Matt Dulcich, Director of Environmental Planning UC Davis Campus Planning and Environmental Stewardship 530.752.9597
Project sponsor's name and address:	University of California, Davis One Shields Avenue 436 Mrak Hall Davis, CA 95616-8678
Location of administrative record:	See Project Sponsor
Previously Certified 2018 LRDP Programmatic EIR:	This addendum documents that none of the conditions described in Section 15162 have occurred and the Project will not have significant effects that were not already discussed in of the Programmatic Environmental Impact Report (EIR) for the University of California (UC) Davis 2018 Long Range Development Plan (2018 LRDP) (State Clearinghouse No. 2017012008). The 2018 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 2018 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://campustomorrow.ucdavis.edu/

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2 INTRODUCTION

2.1 PURPOSE OF THIS ADDENDUM

After certification of the environmental impact report (EIR) and adoption of the Long Range Development Plan (LRDP) for the UC Davis campus in 2018, the University has proposed the Bainer Hall the Chemistry Complex Addition and Renovation Project (the "Project"). This Project is consistent with the land use designations and intensities of development contemplated in the 2018 LRDP, but was not specifically described in that document. This addendum describes the Project, which would involve renovations to an existing building and minor footprint changes within the central campus, and evaluates how this modification to the 2018 LRDP is covered by the 2018 LRDP EIR. No subsequent CEQA document is necessary for the Project.

2.1.1 2018 Long Range Development Plan Environmental Impact Report

The 2018 LRDP is a comprehensive land use plan that guides physical development on the UC Davis campus to accommodate projected enrollment increases and expanded and new program initiatives (UC Davis 2018b). The UC Davis 2018 LRDP EIR (State Clearinghouse No. 2017012008) (UC Davis 2018a) was prepared in accordance with Section 15168 of the CEQA Guidelines and Public Resources Code Section 21094 and analyzed the environmental impacts of the 2018 LRDP. The 2018 LRDP EIR (Volume 1) analyzes full implementation of uses and physical development proposed under the 2018 LRDP (UC Davis 2018b), and identifies measures to mitigate the significant adverse program-level and cumulative impacts associated with that growth.

The Bainer Hall and Chemistry Complex Addition and Renovation Project (the "Project"), is an element of the growth that is consistent with the land uses and intensities of development identified in the 2018 LRDP and the Project is within the scope of activities covered in the environmental impact evaluation in the 2018 LRDP EIR. However, because this Project was not specifically identified in the 2018 LRDP and LRDP EIR, this addendum to the LRDP EIR has been prepared. This addendum utilizes a modified checklist format to document that the site-specific renovations are covered by the 2018 LRDP EIR pursuant to Section 15168(c) of the State CEQA Guidelines, which states, "subsequent activities in the program must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared." Pursuant to Section 15168(c)(4), an agency should use "…a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were covered in the program EIR." The checklist is set up to document that none of the conditions described in CEQA Guidelines Section 15162 calling for the preparation of a subsequent EIR have occurred and an addendum to the 2018 LRDP EIR may be prepared (per CEQA Guidelines Section 15164).

The organization of project-specific environmental analysis in this document follows the same overall format of the 2018 LRDP EIR (Volume 1); however, it avoids repetition of general background and setting information, the regulatory context, overall growth-related information, as well as issues that were evaluated fully in the 2018 LRDP EIR that require no further analysis, including cumulative impacts and alternatives to the 2018 LRDP. Instead, this addendum evaluates the more detailed project-level information specific to the Bainer Hall and Chemistry Complex Addition and Renovation to document that the Project activities are within the activities evaluated in the program EIR and that no subsequent EIR is required.

2.1.2 CEQA Guidelines Regarding an Addendum

If, after certification of an EIR, minor technical changes or additions are necessary or none of the conditions described in CEQA Guidelines Section 15162 calling for the preparation of a subsequent EIR have occurred, an addendum to the EIR may be prepared.

Public Resources Code (PRC) Section 21166 and Sections 15162(through 15163) of the State CEQA Guidelines describe the conditions under which subsequent document would be prepared. In summary, when an EIR has been certified or a mitigated negative declaration (MND) adopted for a project, no subsequent document shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in light of the whole record, one or more of the following:

- substantial changes are proposed in the project that will require major revisions of the previous EIR or MND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- substantial changes occur with respect to the circumstances under which the project is undertaken that will require major revisions of the previous EIR or MND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR or MND was certified as complete was adopted, shows any of the following:
  - the project will have one or more significant effects not discussed in the previous EIR or MND;
  - significant effects previously examined will be substantially more severe than shown in the previous EIR or MND;
  - mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
  - mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR or MND would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Section 15164 of the CEQA Guidelines provides that a lead agency may prepare an addendum to a previously adopted EIR if some changes or additions are necessary, but none of the conditions described above for Section 15162 calling for preparation of a subsequent document have occurred. CEQA allows lead agencies to restrict review of modifications to a previously approved project to the incremental effects associated with the proposed modifications, compared against the anticipated effects of the previously approved project at build-out.

Changes to the approved LRDP in connection with the Project and any altered conditions since certification of the EIR in July 2018 would:

- not result in any new significant environmental effects, and
- not substantially increase the severity of previously identified significant effects.

In addition, no new information of substantial importance has arisen that shows that:

- the Project would have new significant effects,
- the Project would have substantially more severe effects,
- mitigation measures or alternatives previously found to be infeasible would in fact be feasible, or
- mitigation measures or alternatives that are considerably different from those analyzed in the EIR would substantially reduce one or more significant effects on the environment.

As described in Chapter 3 of this document, "Project Description," and Chapter 4, "Coverage Under the 2018 LRDP and 2018 LRDP EIR," none of the conditions described above from Section 15162 calling for preparation of a subsequent document have occurred. Therefore, the differences between the approved LRDP, as described in the certified EIR, and the project modifications now being considered constitute changes consistent with CEQA Guidelines Section 15164 that may be addressed in an addendum to the EIR.

2.2 ORGANIZATION OF THE ADDENDUM

This addendum is organized into the following sections:

Chapter 1 – Project Information: provides a summary of information about the Project, including project location, lead agency, and contact information.

Chapter 2 – Introduction: summarizes the purpose of the addendum, the 2018 LRDP EIR, and this document's organization.

Chapter 3 – Project Description: includes a description of all elements of the Project triggering the addendum.

Chapter 4 – Coverage under the 2018 LRDP and 2018 LRDP EIR: describes the consistency of the Project with the 2018 LRDP and 2018 LRDP EIR, and includes an environmental checklist for each resource topic. This section of the addendum analyzes the potential effects on the existing physical environment from implementation of the proposed modifications, as compared to the approved 2018 LRDP. This analysis has been prepared to determine whether any of the conditions described above that would require preparation of a subsequent or supplemental EIR would occur as a result of the project modification.

Chapter 5 – Applicable 2018 LRDP EIR Mitigation Measures: lists measures from the 2018 LRDP EIR that are applicable to the Project.

Chapter 6 – References: lists references used in the preparation of this document.

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3 PROJECT DESCRIPTION

3.1 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 (see Exhibit 3-1). The campus is composed of four geographical areas: the central campus, the south campus, the west campus, and Russell Ranch (Exhibit 3-2). Most classroom-based academic, office, laboratory, and extracurricular activities occur within the central campus. The central campus consists of approximately 900 acres and is bounded approximately by Russell Boulevard to the north, State Route (SR) 113 to the west, Interstate Highway 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 (Pedrick Road). The south and west campus units are contiguous with the central campus and are used primarily for field teaching and research and animal support uses. The approximately 1,600-acre Russell Ranch portion of the campus lies to the west, separated from the west campus by approximately one and one-half 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.

3.2 PROJECT SITE

Bainer Hall and the Chemistry Complex are located within the *Academic & Administrative* land use of the UC Davis central campus area (UC Davis 2018:2-8). The project site is within the campus Academic Core, which also includes the Silo Student Center and the Quad at its center, surrounded by buildings that house the following programs: social sciences, humanities, arts, engineering/physical sciences, and agricultural/environmental/biological sciences.

As shown in Exhibit 3-3, the Bainer Hall and Chemistry Complex project site is approximately 6.6 acres and includes three existing buildings. A brief description of each existing building within the project site boundary, including its size and current use, is provided below.

3.2.1 Bainer Hall

Bainer Hall was constructed in 1966 and includes approximately 163,665 square feet (sf) of area used exclusively by the College of Engineering. The building is divided into an East Wing and a West Wing. The East Wing is a three-story structure that houses offices, classrooms, and laboratory space. The West Wing is a single-story, U-shaped structure which is further divided into a North Zone and a South Zone. The West Wing is used primarily for research and fabrications laboratories.

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Exhibit 3-1 Regional Location

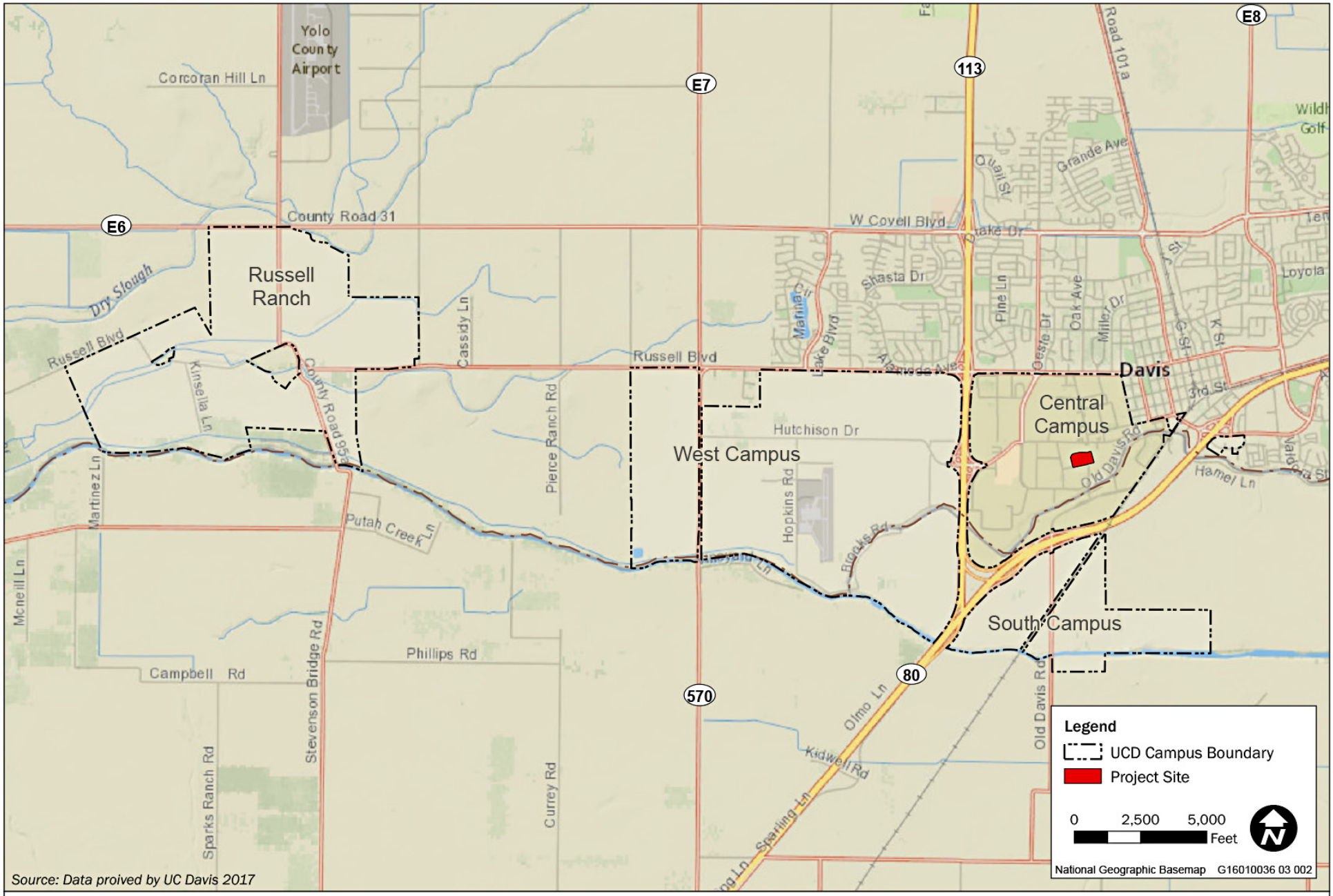

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Exhibit 3-2 Project Location

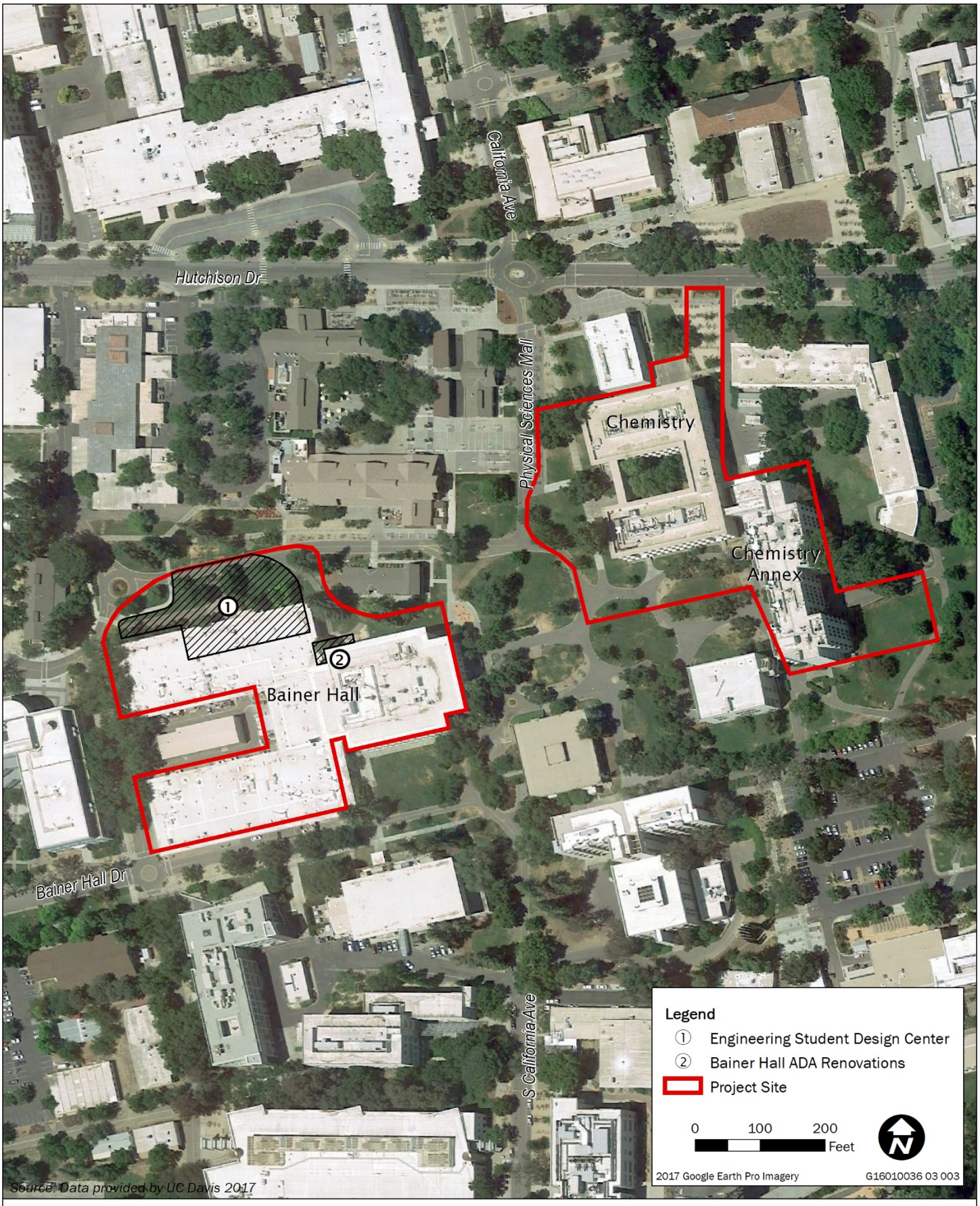

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Exhibit 3-3 Project Site

3.2.2 Chemistry Building

The Chemistry building was constructed in 1966 and includes 130,149 sf of area used for classrooms, offices, and laboratories. The structure includes three above-ground stories and a basement level. The main mass of the building is U-shaped with the opening facing west. For floors 2 and 3, exterior skywalks connect the north and south ends of the U. A single-story lecture hall (Peter A. Rock Hall) projects from the north wing of the main building mass, and is connected to the main building via the basement level. The main entry doors for Peter A. Rock Hall face north. A loading dock is located at the southeast corner of the main building mass, and forms part of the junction with the Chemistry Annex.

3.2.3 Chemistry Annex

The Chemistry Annex was constructed in 1972 and includes approximately 60,000 sf of area for classrooms, offices, and laboratories. The building is a five-story, roughly I-shaped building that connects to the main Chemistry structure through skyways on the second and third levels. The ground level connection area is open and located adjacent to the loading dock at the southeast corner of the main structure.

3.3 PROJECT ELEMENTS

3.3.1 Bainer Hall

The Bainer Hall portion of the Project is a proposal to construct a new Engineering Student Design Center (ESDC), to be located at the northeast corner of the North Zone of the West Wing portion of the building (Exhibit 3-3). The ESDC would include renovation of approximately 11,000 sf of the existing structure (Exhibit 3-4), with the addition of 11,000 sf of new construction for a total of 22,000 sf. The Bainer Hall work would also include renovations to an existing ADA accessible ramp along the northern edge of the East Wing.

3.3.2 Chemistry Complex

The Chemistry Complex consists of the Chemistry building and the Chemistry Annex. Table 3-1 lists the six proposed elements of the Chemistry Complex work, in the order that they are proposed to be implemented. Exhibit 3-5 shows the proposed Chemistry Complex project and corresponds with the projects listed in Table 3-1.

Table 3-1 Chemistry Complex Projects

Element	Name	Description	Start*	End*
1	Chemistry Modulars	Install approximately 5,000 sf of leased classroom modular buildings and leased office modular buildings adjacent to the Chemistry Annex to house administrative and faculty support space and general assignment classrooms.	06-2019	12-2019
2	Chemistry Annex Seismic Work 2	Complete interior seismic work in the basement, first, second, and third floors of the Chemistry Annex.	12-2019	12-2021

Table 3-1 Chemistry Complex Projects

Element	Name	Description	Start*	End*
3	Chemistry Alterations 1	Interior alterations in Chemistry Building and Chemistry Annex to provide relief and swing space.	06-2019	12-2019
4	Phase 1 Renovation	Renovate the northeast section of the first floor of the Chemistry Building to convert existing classrooms, meeting spaces, chemical storage areas, and offices into new research laboratories and new office and meeting space. Improve building systems to increase efficiency, reliability, and capacity.	12-2019	12-2021
5	Chemistry Addition	Construct a new 32,000 sf addition with new laboratory, collaboration, and office space at the western face of the existing structure.	12-2019	12-2021
6	Chemistry Annex and First Floor Renovations	Renovate the first floor of Chemistry Annex to provide renovated teaching labs and improve building systems	06-2020	12-2022

* Estimated construction start and end dates by calendar month and year.

3.3.3 Utilities

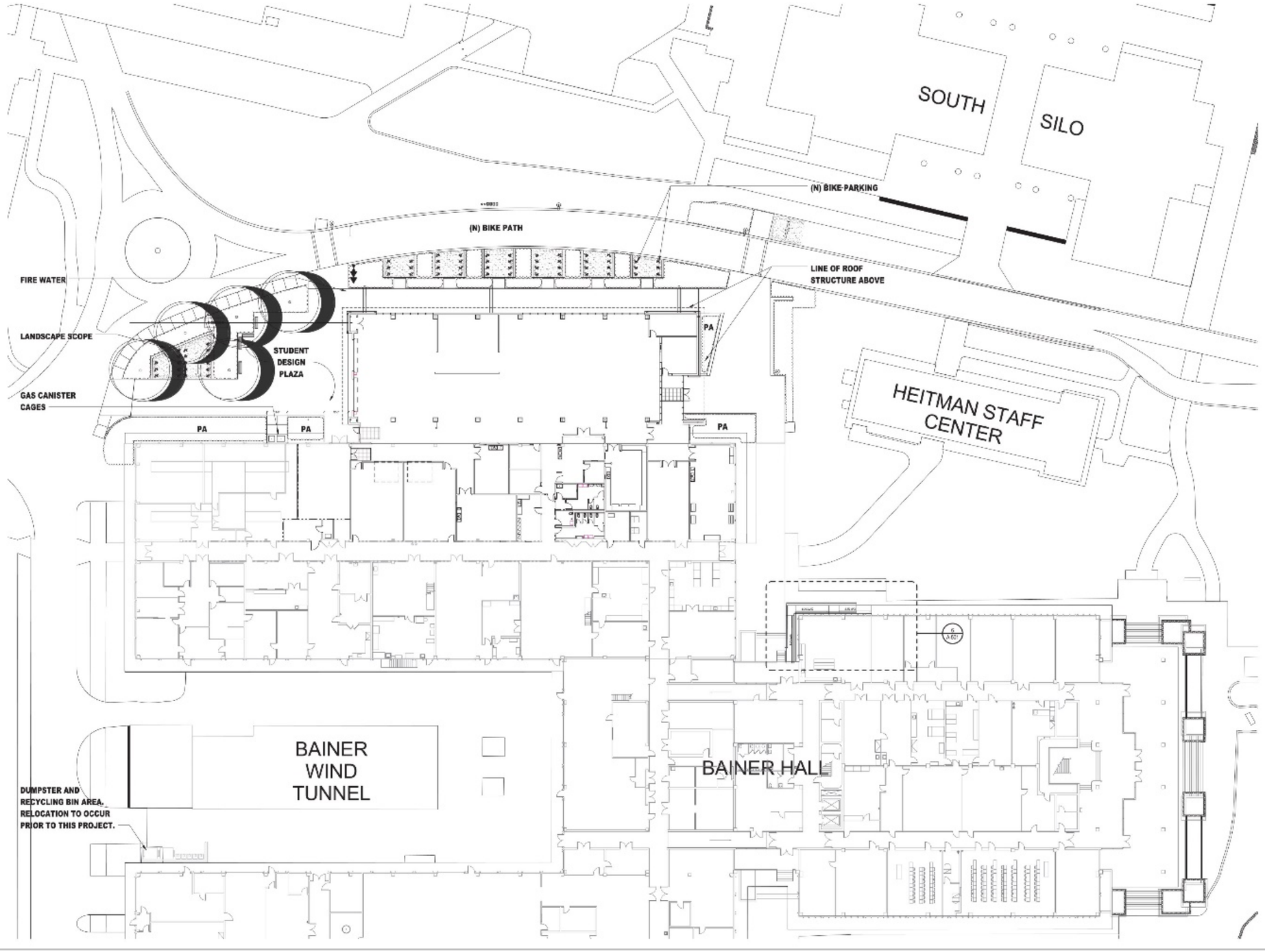
The project site is served by electricity, domestic water lines, wastewater lines, and telecommunications. New and renovated buildings would connect to these existing systems and would include mechanical, electrical, plumbing, and telecommunications systems. The buildings would be designed with a commitment to seismic safety and accessibility for all. Low-flow fixtures would be used to reduce domestic water consumption and the resulting wastewater production. The new and renovated structures would be equipped with fire sprinklers and the firewater layout and a hydrant flow test would be completed by the UC Davis Fire Department. Heating and cooling for the building would be served by the campus Central Heating and Cooling Plant. The Project would connect to existing conduit and telephone lines.

3.3.4 Population

The Project would increase the overall UC Davis building area by 48,000 sf and would accommodate approximately 15 additional employees. The proposed additional increase in building area will address current inadequacies for the existing student population and will not provide capacity for or result in additional students.

3.3.5 Construction Timing

Work on Bainer Hall could start as early as August 2020 and would last approximately 16 months. Construction of the Chemistry Complex is anticipated to begin as early as June 2019, with the last project anticipated to be completed in December 2022. The timing of the six Chemistry Complex projects is shown in Table 3-1, above.



Source: UC Davis 2017

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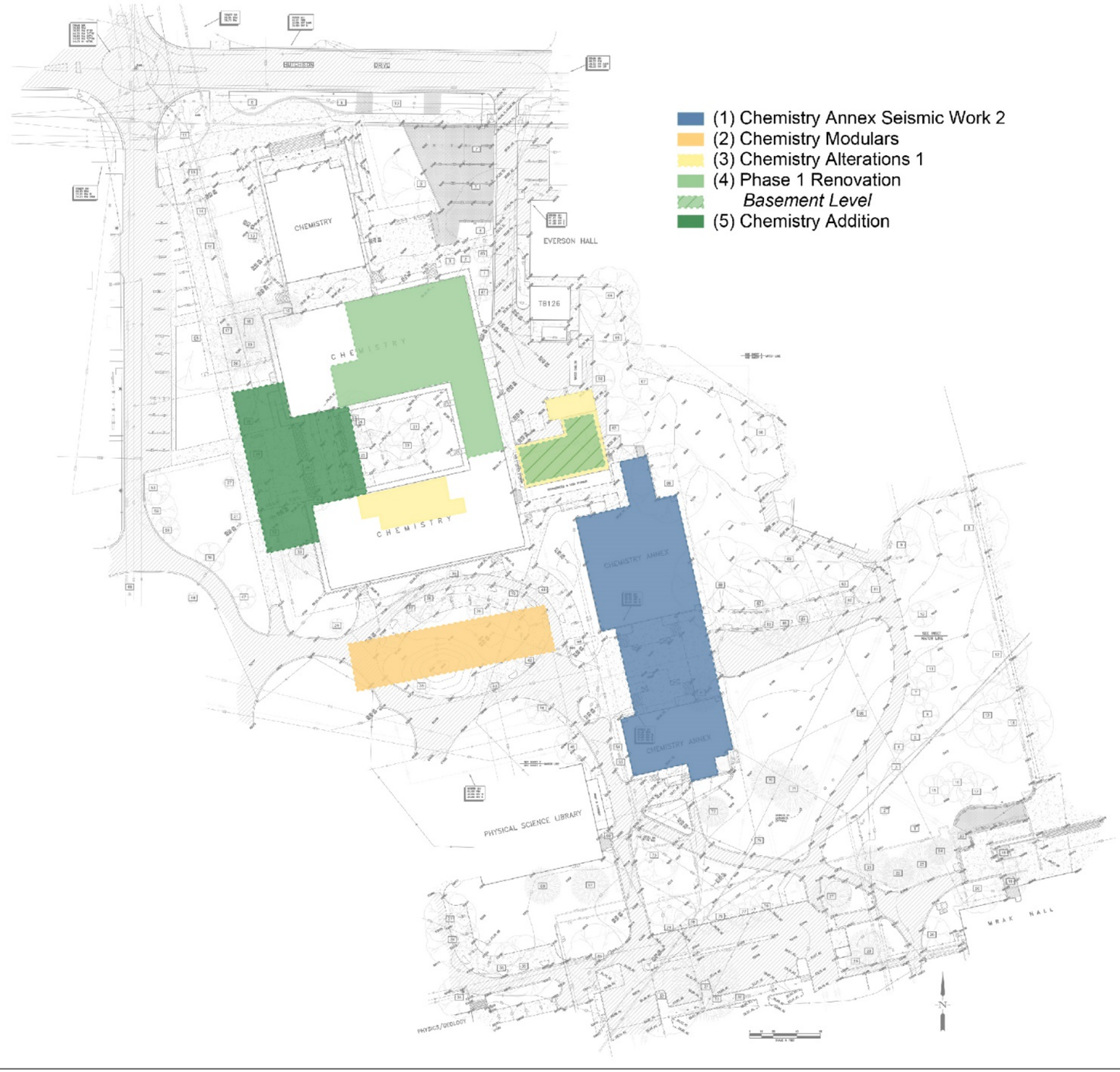
Exhibit 3-4 Proposed Bainer Hall Plan



Source: Provided by UC Davis in 2018

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Exhibit 3-5 Proposed Chemistry Complex Plan

3.3.6 Sustainability Goals

The Project would comply with the UC Policy on Sustainable Practices and would meet the campus baseline as applicable to the Project. UC Davis is using the UC's Whole Building Energy Targets (Energy Use Intensity or EUI) standard for this project's energy-efficiency goals. In addition, UC Davis implements Green Building practices under the U.S. Green Building Council's Leadership in Energy and Environmental Design program (LEED version 4). UC Davis is requiring that the Project meet LEEDv4 Silver certification, and is striving to achieve LEEDv4 Gold certification. The Project would support the UC Carbon Neutrality Initiative by seeking carbon neutral and/or net-zero energy performance (UC Davis 2018c). When the entire addition and remodel are complete, the project would apply for LEEDv4 certification.

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4 COVERAGE UNDER THE 2018 LRDP AND 2018 LRDP EIR

To determine the Project's coverage with the 2018 LRDP and 2018 LRDP EIR, the following questions must be answered:

- Are the objectives of the Project consistent with the objectives adopted for the 2018 LRDP?
- Are the changes to campus population associated with the Project included within the scope of the 2018 LRDP's population projections?
- Is the proposed location of the Project in an area designated for this type of use in the 2018 LRDP?
- Is the Project included in the amount of the development projected in the 2018 LRDP?
- Have the conditions described in CEQA Guidelines Section 15162 calling for preparation of a subsequent EIR occurred?

Sections 4.1 through 4.4 document the Project's coverage by and consistency with the objectives, population projections, land use designations, and development projections contained in the 2018 LRDP. Section 4.5 contains a detailed examination of environmental topics documenting that the Bainer Hall and Chemistry Complex Addition and Renovation Project is within the scope of the environmental impact analysis in the 2018 LRDP EIR and none of the conditions described in CEQA Guidelines Section 15162 calling for the preparation of a subsequent EIR have occurred.

4.1 2018 LRDP OBJECTIVES

The overall objective of the 2018 LRDP is to support the teaching, research, and public service missions of the UC. The 2018 LRDP planning goals are structured as three interrelated types of actions: support the academic enterprise, enrich community life, and create a sustainable future. The Project would support these 2018 LRDP objectives as follows.

Support the Academic Enterprise: The Bainer Hall and Chemistry Complex Addition and Renovation would create new educational facilities to encourage academic growth. The renovations to Bainer Hall would create the Engineering Student Design Center and ADA accessible ramps to allow for an increase in educational opportunities. The Chemistry Complex buildings renovations would create an increase in classrooms and offices for students and faculty use.

Enrich Community Life: The Project would create memorable and functional student study and gathering areas, enhancing the academic mission and contributing to a strong sense of community. The Project does not involve construction or alteration of any campus housing.

Create a Sustainable Future: The Project would promote compact and clustered development of academic/administrative facilities on the central campus. The Project would update outdated building areas, intensifying use of the central campus, conserving land, and utilizing existing building corridors. The Project would comply with the UC Sustainable Practices Policy. The goal for the new buildings is to be 20 percent more efficient than Title 24 standards and to support the UC Carbon Neutrality Initiative by seeking carbon neutral and/or net-zero energy performance. Furthermore, the Project would connect to existing central campus pedestrian and bicycle paths.

4.2 2018 LRDP CAMPUS POPULATION

The 2018 LRDP anticipates that student enrollment may grow from 33,825 in 2016-2017 (academic year) to approximately 39,000 students by 2030-2031, an increase of 5,175 students. As of 2017-18, the academic year with the most recent available data, a portion of the enrollment growth has already occurred as shown in Table 4-1. Classroom capacity is a limiting factor for student access to courses that are necessary to support their timely progress toward graduation. Additional instructional seats are necessary to serve the existing student population. Current enrollment levels do not exceed that contemplated in the 2018 LRDP, as shown in Table 4-1, below.

The campus faculty and staff population is projected to increase under the 2018 LRDP from approximately 12,365 in 2016-2017 to approximately 14,500 by 2030-2031, an increase of 2,135 (UC Davis 2018:2-5 and 2-6). The Project would support up to 15 new staff, contributing to the projected 2018 LRDP employment increase; however, the total campus population would not exceed that contemplated in the 2018 LRDP as shown in Table 4-1, below.

Table 4-1 UC Davis 2018 LRDP Population Projections

	2018 LRDP EIR Projections for 2030	2017-2018 Actual	Planned Additional Growth
Student Enrollment	39,000[1]	34,734	4,266
Employment	14,500	12,631	1,869
Los Rios Davis Community College Center	1,230	615	615
Dependents (of UC residents)	1,949	460	1,489
Non-UC employees (USDA, daycare, third-party support staff, mixed use, K-12)	590	285	305
Total Campus Population	57,269	48,725	8,544

Notes: 2018 LRDP = 2018 Long Range Development Plan; UC = University of California; USDA = U.S. Department of Agriculture.

1. Three-quarter average headcount of Davis-based student population.

Source: UC Davis 2018

4.3 2018 LRDP LAND USE DESIGNATION

The 2018 LRDP designates the project site as *Academic & Administrative*, defined as land and structures that facilitate teaching, research, and the public service mission. The *Academic & Administrative* land use designation is the primary land use associated with the academic enterprise. The buildings in this land use designation accommodate most instruction and research space. The Project would provide new classrooms, and office spaces consistent with this land use designation.

4.4 2018 LRDP ACADEMIC BUILDING SPACE

The 2018 LRDP provides capacity for approximately 2 million square feet of additional academic building space for classrooms and study space, instructional and research labs, faculty and administrative offices, and other programs to support the academic mission in existing space. The Project would result in the remodeling and renovation of 61,400 square feet of existing space and

the construction of 48,000 square feet of net new increase of academic building space on the central campus.

The 2018 LRDP EIR projected that during any particular year, the 2018 LRDP EIR activities could include construction of 200,000 sf of academic space as shown in 2018 LRDP EIR Table 3.3-4, "2018 LRDP General Construction Schedule." During the Project's construction period in 2019 to 2022, construction of academic buildings would include the 48,000 sf increase associated with the Bainer Hall and Chemistry Complex and approximately 110,000 sf per year of other academic buildings. During 2019-2022, the construction activities would remain below the 200,000-sf estimate used in the 2018 LRDP EIR.

The Project would support the University's effort to solve building space shortage and provide additional capacity to accommodate potential teaching and research initiatives. The Project would not exceed the academic building space contemplated in the 2018 LRDP.

4.5 ENVIRONMENTAL REVIEW OF PROJECT ACTIVITIES

UC Davis has determined that, in accordance with PRC Section 21166 and Section 15164 of the State CEQA Guidelines, minor technical changes or additions to the EIR are necessary to address the modifications to the approved LRDP. An addendum to a certified EIR is prepared when changes to a project are required, and the changes:

- will not result in any new significant environmental effects, and/or
- will not substantially increase the severity of previously identified effects.

The analysis of environmental effects provided below addresses the same impacts addressed in the 2018 LRDP EIR. The environmental analysis evaluates whether, for each environmental resource topic (e.g., land use, traffic, air quality), there are any changes in the project or the circumstances under which it would be undertaken that would result in new or substantially more severe environmental impacts than considered in the 2018 LRDP EIR.

The University has defined the column headings in the environmental checklist as follows:

Impact Examined in the 2018 LRDP EIR?: "Yes" is stated where the potential impacts of the Project were examined in the 2018 LRDP EIR. This document summarizes and cross references the relevant analysis in the 2018 LRDP EIR.

Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?: This question is answered with a "yes" or "no," as substantiated by the discussion provided below the table. If the response is "yes," additional CEQA analysis is required.

Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?: This question is answered with a "yes" or "no," as substantiated by the discussion provided below the table. If the response is "yes," additional CEQA analysis is required.

Do Mitigation Measures in the 2018 LRDP EIR Address/Resolve Impacts?: This question is answered with a "yes," "no," or "N/A," as substantiated by the discussion provided below the table. The answer N/A indicates there was no potential impact under the 2018 LRDP EIR and the Project does not change the impact conclusion. The 2018 LRDP EIR mitigation measures are summarized and cross

referenced, and the mitigation measures applicable to the Project are summarized in Section 6 of this addendum.

4.5.1 Aesthetics

Section 3.1 of the 2018 LRDP EIR evaluates the impacts of campus growth under the 2018 LRDP on aesthetics by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Aesthetics Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
a) Have a substantial adverse effect on a scenic vista?	Yes	No	No	N/A
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Yes	No	No	N/A
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	Yes	No	No	N/A
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Yes	No	No	Yes

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a) The project site is located on the central campus where views are limited largely by existing development and landscaping, and long-distance views are precluded. The 2018 LRDP EIR identified significant and unavoidable impacts to scenic long-distance views from the UC Davis west campus (2018 LRDP EIR Impact 3.1-1); however, the Project is not located on the west campus and would not alter views from the west campus. Through adherence to the Campus Design Guide Manual, UC Davis prioritizes maintenance of existing long-distance views along existing view corridors. Development of the Project would not alter a scenic vista from within or across the central campus and the building and site improvements would be consistent with and complementary to existing central campus development. The project would not contribute to 2018 LRDP EIR Impact 3.1-1. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

b) As explained in Section 3.1.3 of the 2018 LRDP EIR, Interstate 80 (I-80) and State Route 113 (SR 113), the highways in the vicinity of the campus, are not designated as state scenic highways. Neither the campus nor the project site is located near a state scenic highway. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

c) The 2018 LRDP focuses land uses changes primarily within and around the central campus. Consistent with this focus, the Project would redevelop Bainer Hall and the Chemistry Complex.

As discussed in 2018 LRDP EIR Impact 3.1-2 (less than significant), while the Project would modify the existing visual character and quality of the site, the changes would not be significant due in large part to the UC Davis design review process that would require consideration of and consistency with adjacent development. The Project would be consistent with the *Academic & Administrative* land use and would conserve the existing pattern of uses on the central campus. The Project would renovate buildings that are unremarkable and build new buildings within a developed high-density academic and administrative area. Further, the Project, as part of the UC Davis design review process and in accordance with the UC Davis Physical Design Framework and Campus Design Guide Manual, would provide landscaping, fixtures, and other features consistent with existing conditions, which would soften the visual interface between the Bainer Hall and Chemistry Complex and the rest of the campus. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

d) The central campus is a developed/urban setting. A large number of light fixtures and sources (both interior and exterior) from this urban area of the UC Davis campus and adjacent City of Davis land uses already exist. In addition, the existing buildings within the project site contain building and security lighting that are existing sources of glare and light. The 2018 LRDP EIR found that implementation of the 2018 LRDP would introduce new sources of light and glare associated with new buildings and facilities. Such lighting could contribute to indirect lighting/glare on adjacent land uses that could adversely affect daytime or nighttime views and result in additional skyglow (2018 LRDP Impact 3.1-3). While new project lighting would be similar in nature to existing light sources, it is possible that the new building and exterior spaces could change the light and glare conditions at the site. In compliance with LRDP Mitigation 3.1-3(a), the Project would use textured nonreflective exterior surfaces and nonreflective glass. The exterior lighting would be limited to building entrances, bike parking lots, and lighting along walkways. Consistent with 2018 LRDP EIR Mitigation 3.1-3(b) the all new outdoor lighting would utilize directional lighting methods with shielded and cutoff type light fixtures to minimize glare and upward directed lighting such that light spillover onto adjacent structures does not occur. The Campus Design Review Committee would also review the Project's use of non-directional lighting design to ensure that no adverse effects on nighttime views occur. Consistent with 2018 LRDP Impact 3.1-3, with implementation of 2018 LRDP Mitigation 3.1-3(a) and (b), which are included in the Project, it would have a less-than-significant light and glare impact. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required.

4.5.2 Agricultural and Forestry Resources

Section 3.2 of the 2018 LRDP EIR evaluates the effects of campus growth under the 2018 LRDP on agricultural and forestry resources by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Agricultural and Forestry Resources Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
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?	Yes	No	No	N/A
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	Yes	No	No	N/A
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	Yes	No	No	N/A
d) Result in the loss of forest or agricultural land or conversion of forest land to non-forest or non-agricultural use?	Yes	No	No	N/A
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?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a) As described in 2018 LRDP EIR Impact 3.2-1 (significant and unavoidable), implementation of the 2018 LRDP could result in the conversion of 166 acres of Important Farmland to non-agricultural uses. However, according to the Farmland Mapping and Monitoring Program (FMMP), the project site is designated as Urban and Built-Up Land, and no Important Farmland is located within or adjacent to the Project site. The Project would not convert farmland to non-agricultural use. The project would not contribute to 2018 LRPD EIR Impact 3.2-1 and would not require any mitigation. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

b) Campus lands are state lands and are not eligible for Williamson Act agreements, nor are they subject to local zoning controls. Therefore, this issue is not relevant to the 2018 LRDP or to the Project.

c) None of the campus lands are zoned or otherwise designated as forest land or timberland. Therefore, this issue is not relevant to the 2018 LRDP or to the Project.

d) As described in criterion (c) above, there are no forest lands within the UC Davis campus, including the project site. As described in criterion (a) above, implementation of the 2018 LRDP could result in the conversion of 166 acres of Important Farmland to non-agricultural uses (significant and unavoidable impact). No agricultural land uses exist within or immediately adjacent to the Project site. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

e) As described in 2018 LRPD EIR Impact 3.2-2 (less than significant), development proposed under the 2018 LRDP could result in the direct loss or conversion of existing agricultural uses; however, it is unlikely that indirect conversion of land outside of campus boundaries would occur. The project site is not adjacent to agricultural, forest land, or timberland. Therefore, the Project would not involve any changes that could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

4.5.3 Air Quality

Section 3.3 of the 2018 LRDP EIR addresses the air quality effects of campus growth under the 2018 LRDP by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Air Quality Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
a) Conflict with or obstruct implementation of the applicable air quality plan?	Yes	No	No	Yes
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Yes	No	No	Yes
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)?	Yes	No	No	Yes
d) Expose sensitive receptors to substantial pollutant concentrations?	Yes	No	No	Yes
e) Create objectionable odors affecting a substantial number of people?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a,b,c,d) Emissions of criteria air pollutants and precursors associated with project construction and operational are discussed separately below.

Construction-Generated Emissions of Criteria Air Pollutants and Precursors

2018 LRDP EIR Impact 3.3-1 disclosed that construction under the 2018 LRDP would result in emissions of ROG, NO_X, and PM_{10} that would exceed YSAQMD's thresholds starting in 2019. Project-related construction activities would result in emissions of criteria air pollutants and ozone precursors from demolition, site preparation (e.g. grading, and clearing), heavy-duty off-road equipment, material delivery, and construction worker commute exhaust emissions, asphalt paving, and the application of architectural coatings. Fugitive dust emissions, including PM_{10} and $PM_{2.5}$, would be generated during site preparation and vary as a function of soil silt content, soil moisture, wind speed, and area of disturbance. Exhaust emissions of PM_{10} and $PM_{2.5}$ would result from combustion of fuels. Ozone precursor emissions would primarily be associated with exhaust form construction equipment, haul truck trips, and worker trips. Emissions of ROG would also be generated during asphalt paving and the application of architectural coatings.

The 2018 LRDP EIR documented the overall expected construction emissions from activities within the 2018 LRDP implementation and identified, on an annual basis, that aggregated

campus-wide construction activities during 2019 and 2020 that could result in significant impacts. The 2018 LRDP EIR projected that during any particular year, the 2018 LRDP EIR activities could include construction of 200,000 sf of academic space as shown in Table 3.3-4, "2018 LRDP General Construction Schedule," of the 2018 LRDP EIR. During the Project's construction period in 2019 to 2022, construction of academic buildings would include the 48,000 sf increase associated with the Bainer Hall and Chemistry Complex and approximately 110,000 sf per year of other academic buildings. During 2019-2022, the construction activities would remain below the 200,000-sf estimate used in the 2018 LRDP EIR. The Project-related emissions would contribute to the overall 2018 LRDP construction emissions as evaluated in the 2018 LRDP EIR, but no new or substantially more severe impacts would result.

As required by 2018 LRDP EIR Mitigation Measure 3.3-1, UC Davis would reduce emissions of ROG, NO_X, and PM_{10} by requiring the project contractor to implement emissions reduction measures. At the program level, the 2018 LRDP EIR Impact 3.3-1 determined that construction under the 2018 LRDP would not generate construction-related emissions of ROG or PM_{10} that exceed YSAQMD significance criteria, but NO_X emissions would be significant and unavoidable. This impact was addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2018 LRDP. No additional mitigation is necessary to reduce the Project's contribution to these impacts.

Long-Term Operational Emissions of Criteria Air Pollutants and Precursors

2018 LRDP EIR Impact 3.3-2 determined that long-term operational emissions related to the 2018 LRDP could exceed YSAQMD significance thresholds for ROG and NO_X but would not exceed YSAQMD thresholds for PM_{10} and $PM_{2.5}$. Thus, long-term operational emissions of ROG and NO_X could conflict with the air quality planning efforts and contribute substantially to the nonattainment status of Yolo County with respect to the NAAQS and CAAQS for ozone. Because there is uncertainty regarding the effectiveness of 2018 LRDP EIR Mitigation Measure 3.3-2, which includes several strategies to reduce operational emissions to the extent feasible, this impact was determined to be significant and unavoidable at the program level. This impact was addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2018 LRDP.

The Project-related vehicle trips, operational maintenance activities, and natural gas use through the Central Plant would contribute to the overall 2018 LRDP operational emissions of criteria air pollutants and precursor emissions. The project-related increase of five new employees in Bainer Hall and 10 new employees in the Chemistry Complex is within the number of employees anticipated in the 2018 LRDP and the academic building is within the amount of development and type of land use planned for the central campus in the 2018 LRDP and evaluated in 2018 LRDP EIR. Mobile-source emissions of criteria air pollutants and precursors associated with new employee commute trips were evaluated with the operational emissions analyzed in the 2018 LRDP EIR Impact 3.3-2. Operational emissions of criteria air pollutants and precursors would also be generated from building energy use through the consumption of electricity and natural gas (indirect use of natural gas through heating and cooling from the Central Plant). Consistent with the 2018 LRDP, the Project would implement the University of California Sustainable Practices Policy, which encompasses nine areas of sustainable practices to be implement by all campuses within the UC system: green building, clean energy, transportation, climate protection, sustainable operations, waste reduction and recycling, environmentally preferable purchasing, sustainable foodservice, sustainable water systems. Specifically, UC Davis is using EUI standards for energy-efficiency goals and is requiring that the Project achieve a minimum LEEDv4 Silver certification. The Project would support the UC Carbon Neutrality Initiative by seeking carbon neutral and/or net-zero energy performance (UC Davis 2018c).

As required by 2018 LRDP EIR Mitigation Measure 3.3-2, UC Davis shall implement strategies to reduce mobile-source criteria air pollutants and precursors through reductions in single occupancy vehicle trips (e.g., promoting the use of electric vehicles, carpool, transit vehicles; incentivizing carpool through access to premium parking locations on campus; and promotion of the use of electric vehicles and clean fuels for vendors on campus). The project site is in the central campus where vehicular travel is restricted, the Project provides bicycle parking and connections to campus bike paths, and provides pedestrian pathways. The Project-related vehicle miles traveled (VMT) represent only a small portion of the total increase in VMT associated with full buildout under the 2018 LRDP. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required.

Construction-Generated Emissions of Toxic Air Contaminants

2018 LRDP EIR Impact 3.3-4 determined that 2018 LRDP construction activities would result in temporary, short-term project-generated emissions of TACs, particularly diesel PM, that could expose sensitive receptors to an incremental increase in cancer risk that exceeds 10 in one million or a hazard index greater than 1.0. Consistent with 2018 LRPD EIR Impact 3.3-4, project-related construction activity would result in temporary, intermittent emissions of diesel PM as a result off-road, heavy-duty diesel equipment used during construction. However, the mass diesel PM emissions that would be generated by construction would be low and construction-related TAC emissions would not expose sensitive receptors to an incremental increase in cancer risk greater than 10 in 1 million or a hazard index greater than 1.0. Furthermore, as required by 2018 LRDP EIR Mitigation Measure 3.3-4, UC Davis shall require the Project contractor to locate diesel-powered equipment away from sensitive receptors as possible, reduce equipment idling times, and use equipment with Tier 3 engine ratings or better, and use alternatively-fueled equipment if available to further reduce TAC emissions. Therefore, consistent with 2018 LRDP EIR Impact 3.3-4, the project-related TAC emissions would be less than significant with mitigation. The Project would result in no new or substantially more severe impacts and would require no additional mitigation measures.

Operational Emissions of Toxic Air Contaminants

2018 LRDP EIR Impact 3.3-5 (less than significant) determined that the additional sources of TACs (e.g., laboratories, boilers) under the 2018 LRDP would not result in additional risks that exceed YSAQMD thresholds of 10 in one million for cancer risk and a hazard index equal to or greater than 1.0 for the maximally exposed individual. The Project may result in the replacement of existing sources of TAC emissions such as laboratory fume hoods, the specifications and exact locations of which are not known at this time. The Project may result in the replacement of existing natural-gas powered back-up generators with diesel-powered generators. However, such emergency back-up generators are exempt from permitting (i.e., Rule 3.4) due to limited use for such sources and therefore would not result in exposure of sensitive receptors to substantial concentrations of TACs.

The project site is located in the academic core of the campus, which is primarily composed of high density academic and administrative facilities. The closest student housing is Tercero Residence Hall approximately 1,200 feet from the Chemistry Complex, which includes laboratory fume hoods. Studies show that TAC emissions are highly dispersive, and receptors must be in close proximity for a long duration of time. The UC Davis Laboratory Safety Manual states that fume hoods are evaluated and certified every year by Facilities Management to ensure proper ventilation and have an audible and visible alarm to show proper operation (UC Davis 2016). Further, YSAQMD does not consider laboratory fume hoods equipment that would be subject to a permit because of the relative low level of toxicity associated with typical chemicals used in laboratories and the relative magnitude of annual emissions is low compared to other sources

(e.g., diesel engines, manufacturing facilities). In addition, the Project includes retrofitting existing buildings that meet current seismic and energy codes and would not result in additional laboratory fume hoods such that TAC levels would increase. Considering the safety measures in place and the highly dispersive nature of TAC's and distance to residents, TAC emissions would not result in harmful levels to nearby residences. The Project's operational sources of TACs would not expose sensitive receptors to an incremental increase in cancer risk that exceeds 10 in 1 million or a hazard index greater than 1.0. Therefore, no new or substantially more severe impacts would occur and no additional mitigation measures would be required.

Land Use Compatibility with Off-Site Sources of Toxic Air Contaminants and Ultrafine Particulates

As addressed in 2018 LRDP EIR Impacts 3.3-5 (less than significant) and 3.3-6 (less than significant with mitigation),, the 2018 LRDP would not exceed the threshold for incremental cancer risk (10 in one million), and thus, would not be considered to "exacerbate" existing environmental hazards. In addition, as described above, the Project-related TAC emissions would not expose sensitive receptors to an incremental increase in cancer risk that exceeds 10 in 1 million or a hazard index greater than 1.0. Furthermore, the project site is located over a quarter mile from I-80 and does not include any housing. Therefore, the Project would not project would not introduce receptors in close proximity to existing sources of TACs and ultrafine particulates (UFPs) from I-80 or the Union Pacific Rail Road line. The Project is compatible with surrounding central campus academic and administrative land uses and does not propose any housing. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

e) Although the 2018 LRDP EIR would introduce new odor sources to the area, as discussed in 2018 LRDP EIR Impact 3.3-7 (less than significant with mitigation), the Project does not involve a composing facility, biomass boiler, or wastewater treatment plant improvements and would not result in new sources of odors on campus, the relocation of existing odor sources, or the development of residence near an existing odor source. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

4.5.4 Archaeological, Historical, and Tribal Cultural Resources

Section 3.4 of the 2018 LRDP EIR addresses the effects of campus growth under the 2018 LRDP on archaeological, historical, and tribal cultural resources by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Archaeological, Historical, and Tribal Cultural Resources Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	Yes	No	No	Yes
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	Yes	No	No	Yes
c) Disturb any human remains, including those interred outside of formal cemeteries?	Yes	No	No	N/A
d) Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: 1) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or 2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a) 2018 LRDP EIR Impact 3.4-4 determined that development under the 2018 LRDP EIR could result in adverse changes to historical resources as defined in Section 15064.5 (significant and unavoidable). One historic architectural resource, the Heitman Staff Learning Center, formerly known as the hog barn, was identified immediately adjacent to the project site. 2018 LRDP EIR Mitigation Measure 3.4-4 states: "During project-specific environmental review of development

under the 2018 LRDP, the campus shall define the project's area of effect for historic buildings and structures. The campus shall determine the potential for the Project to result in historic resource impacts, based on the extent of ground disturbance and site modification anticipated for the proposed project." The Project would not alter the CRHR-eligible Heitman Staff Learning Center, and construction activities would be approximately 20 feet from the building. Compliance with 2018 LRDP Mitigation Measure 3.4-4 would ensure that the building would not be affected by the Project.

Bainer Hall and the Physical Sciences and Engineering Library, adjacent to the Chemistry Addition building, were evaluated and found not eligible for listing in the CRHR or NRHP. As a result, the buildings would not be considered significant for the purposes of CEQA. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required.

b) As shown on 2018 LRDP EIR Exhibit 3.4-1, the Project site is not within an area of archaeological sensitivity. As discussed in 2018 LRDP EIR Impact 3.4-1 (less than significant with mitigation), the potential for intact buried archaeological resources is considered "moderate" because, although the Project site has not been characterized as sensitive and is not suspected to be a likely location for archaeological resources, project construction would involve excavation below 18 inches deep on the Project site. As such, UC Davis shall implement 2018 LRDP Mitigation Measures 3.4-1a(1) and (2), which require that contractor crews attend an archaeological resource training before the start of earth moving and that a surface survey be conducted by a qualified archaeologist once the area of ground disturbance has been identified and prior the soil disturbing activities. In the event of a surface find, intensive investigation shall be implemented per 2018 LRDP Mitigation Measure 3.4-1a(3). Irrespective of findings, the qualified archaeologist shall, in consultation with the UC Davis Office of Campus Planning and Environmental Stewardship, develop an archaeological monitoring plan to be implemented during the construction phase of the Project. In the event of a discovery, the campus shall implement 2018 LRDP Mitigation Measure 3.4-1a(5). With implementation of these previously-adopted 2018 LRDP EIR mitigation measures, currently undiscovered archaeological resources would be avoided, recorded, or otherwise treated appropriately, in accordance with pertinent laws and regulations. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required.

c) As discussed in 2018 LRDP EIR Impact 3.4-3 (less than significant), although unlikely, the Project has the potential to disturb human remains, including those interred outside of formal cemeteries. If human remains are discovered during any construction activities, potentially damaging ground-disturbing activities in the area of the remains shall be halted immediately, and UC Davis shall notify the Yolo County coroner and the NAHC immediately, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the NAHC to be Native American, the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. Following the coroner's findings, the archaeologist, and the NAHC-designated most likely descendant shall recommend the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in California Public Resources Code Section 5097.94. Compliance with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 would provide an opportunity to avoid or minimize the disturbance of human remains, and to appropriately treat any remains that are discovered. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

d) As discussed in 2018 LRDP EIR Impact 3.4-2 (less than significant), UC Davis notifies the Yocha Dehe Wintun Nation of all projects and provides an update two or three times per year to avoid damaging effects to any tribal cultural resource. If UC Davis determines that a subsequent project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process, new provisions in the PRC describe measures that, if determined by the lead agency to be feasible, could be implemented to reduce potential effects of campus-related development on tribal cultural resources, although none were identified through AB 52 compliance for the 2018 LRDP. Compliance with PRC Section 21080.3.2 and Section 21084.3 (a) and UC Davis's continuing notification of the Yocha Dehe Wintun Nation of all projects, would provide an opportunity to avoid or minimize the disturbance of tribal cultural resources, and to appropriately treat any remains that are discovered. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

4.5.5 Biological Resources

Section 3.5 of the 2018 LRDP EIR addresses the effects of campus growth under the 2018 LRDP on biological resources by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Biological Resources Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Yes	No	No	Yes
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	Yes	No	No	N/A
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?	Yes	No	No	N/A
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?	Yes	No	No	N/A
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Yes	No	No	Yes
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?	Yes	No	No	Yes

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a) The Project site is developed and the 2018 LRDP EIR defines it as urban landscaping /developed habitat (2018 LRDP EIR Exhibit 3.5-1). The project site does not support habitat for special-status plants, and the Project would have no impact on sensitive plant species.

The 2018 LRDP EIR found that development under the 2018 LRDP could potentially result in the loss of special status wildlife species. Based on site characteristics and a review of the sensitive plant and wildlife species within five miles of the project site, there is a potential for Swainson's hawk, northern harrier, and white-tailed kite occur. While these species may occur because of the trees within the project site, these species are not expected to nest within the project site because of the development, the lawn areas are mowed, there is a lack of suitable cover, and there is frequent foot traffic and disturbance. Mitigation Measure 3.5-4a (1 through 4) from the 2018 LRDP EIR would be implemented as part of the Project to prevent disturbance to active Swainson's hawk, white-tailed kite, and other raptor nests. Therefore, no new or substantially more severe impacts would occur and no additional mitigation is required.

b,c) As described in to 2018 LRDP Impact 3.5-9 (less than significant with mitigation), development under the 2018 LRDP could affect aquatic features by introducing sediments into Putah Creek or removing or damaging riparian vegetation. However, the project site is outside of the Putah Creek corridor and does not contain any aquatic, wetland, or riparian habitat. The project site contains buildings, a surface parking lot, and landscaping and is surrounded by roads, bike paths, and other facilities within the developed central campus. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

d) As described in 2018 LRDP EIR Impact 3.5-10 (less than significant), the Putah Creek corridor, which is the southern boundary of the UC Davis central campus, is the principal corridor for the movement of native resident and migratory fish and wildlife through the area. It is the regional connection between the hills in western Yolo County and the Sacramento River. The project site is more than one 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 or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

e) 2018 LRDP EIR Impact 3.5-11 (less than significant with mitigation) determined that implementation of the 2018 LRDP could result in the removal of trees recognized to meet UC Davis standards for important trees. However, the Project would not remove any trees that meet this classification (UC Davis standards for important trees). Consistent with 2018 LRDP EIR Mitigation Measure 3.5-11, a tree survey has been conducted for the project site (Mezger 2015). The important trees identified on the project site would be fenced at their dripline to prevent disturbance during construction and preserved. The Project would not remove any heritage oak trees. Therefore, no new or substantially more severe impacts would occur and no additional mitigation is required.

f) The Yolo Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) was approved on October 30, 2018. UC Davis is currently not a participant in the HCP/NCCP but is a trustee agency. As discussed in 2018 LRDP EIR Impact 3.5-12 (less than significant), CEQA does not require analysis of consistency with proposed plans. However, the 2018 LRDP EIR provided information on the Yolo County HCP NCCP and the Solano County Multi-Species Habitat Conservation Plan (MSHCP) because portions of the UC Davis campus are located within these plan areas. Impacts to species identified in these plans would be mitigated to less-than-significant levels through the adopted 2018 LRDP EIR mitigation measures. Therefore, the 2018 LRDP would not conflict with these proposed plans. The 2018 LRDP EIR mitigation measures would also be implemented for the Project, as discussed in criteria (a) and (e) above, to minimize impacts to special status species and trees. Therefore, no new or substantially more severe impacts would occur.

4.5.6 Energy

Section 3.6 of the 2018 LRDP EIR addresses the energy impacts of campus growth under the 2018 LRDP by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Energy Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
a) Result in unnecessary, inefficient, and wasteful use of energy?	Yes	No	No	N/A
b) Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to energy use?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a,b) Consistent with 2018 LRDP EIR Impact 3.6-1 (less than significant), the one-time energy expenditure required to construct the Project would be nonrecoverable. Most energy consumption would result from operation of off-road construction equipment and on-road vehicle trips associated with commutes by construction workers and haul trucks trips. Construction equipment use and associated energy consumption would be typical of that associated with construction of new residential, educational, and industrial land uses. Idling of on-site equipment during construction would be limited to no more than five minutes in accordance with YSAQMD requirements. Further, on-site construction equipment may include alternatively-fueled vehicles (such as natural gas) where feasible, and the selected construction contractors would use the best available engineering techniques, construction and design practices, and equipment operating procedures. For operations, the Project includes energy-efficient design features that, in combination with State energy efficiency requirements, would reduce overall energy use at the Project site including no direct use of natural gas for the building. UC Davis is using the UC's Whole Building Energy Targets (Energy Use Intensity or EUI) standard for this project's energy-efficiency goals. In addition, UC Davis is requiring that the Project meet LEEDv4 Silver certification for new buildings, and is striving to achieve LEEDv4 Gold certification. The Project would support the UC Carbon Neutrality Initiative by seeking carbon neutral and/or net-zero energy performance (UC Davis 2018c).

As discussed in 2018 LRDP EIR Impact 3.6-2, development under the 2018 LRDP would exceed Title 24 Building Energy Efficiency Standards to reduce energy use, which establish minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building installation and roofing, and lighting. In addition, federal and State regulations including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program would reduce the transportation fuel demand. Project adherence to the increasingly stringent building and vehicle efficiency standards as well as 2018 LRDP design features consistent with UC Carbon Neutrality goals would reduce energy consumption to be consistent with applicable plans, policies, and regulations adopted for avoiding or mitigating environmental effects related to energy. The Project-related energy use would not be considered inefficient, wasteful, or unnecessary. No new or substantially more severe impacts would occur and no mitigation would be required.

4.5.7 Geology, Soils, and Seismicity

Section 3.7 of the 2018 LRDP EIR addresses the geology, soils, and seismicity effects of campus growth under the 2018 LRDP by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Geology, Soils, & Seismicity Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
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.	Yes	No	No	N/A
ii) Strong seismic ground shaking?	Yes	No	No	N/A
iii) Seismic-related ground failure, including liquefaction?	Yes	No	No	N/A
iv) Landslides?	Yes	No	No	N/A
b) Result in substantial soil erosion or the loss of topsoil?	Yes	No	No	Yes
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?	Yes	No	No	N/A
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?	Yes	No	No	N/A
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?	Yes	No	No	N/A
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a,i) As stated on pages 3.7-8 and 3.7-15 of 2018 LRDP EIR, the UC Davis campus and the surrounding area are not located within an Alquist-Priolo Earthquake Fault Zone. The nearest faults identified pursuant to the Alquist-Priolo Act are the Green Valley and Cordelia Faults, which are a part of the San Andreas Fault System, approximately 27 miles southwest of the plan area (2018 LRDP EIR Table 3.7-2). Additionally, the nearest identified active fault zone is the Dunnigan Hills Fault zone located 16.5 miles north of the plan area (2018 LRDP EIR Table 3.7-2). Project site is within the UC Davis campus and therefore would also not be subject to surface fault rupture. This issue is not relevant to the Project.

a,ii) As stated on pages 3.7-8 and 3.7-15 of 2018 LRDP EIR, UC Davis is not located in a regulated Alquist-Priolo Earthquake Fault Zone or a Seismic Hazard Zone; however, there are tectonically active areas to the north and west of the Project, including the Dunnigan Hills Fault, the Cordelia Fault Zone, and the Green Valley Fault (the latter two are components of the San Andreas Fault System) (2018 LRDP EIR Table 3.7-2). As disclosed in 2018 LRDP EIR Impact 3.7-1, these fault zones are within a distance that could subject the plan area to a moderate level of seismic ground shaking, which could result in damage to structures and injury or death to people if they are within structures that fail. The peak ground acceleration for the central campus is estimated to be 0.45–0.48g. This level of seismic activity has the potential to dislodge objects from shelves and to damage or destroy buildings and other structures.

Consistent with development under the 2018 LRDP discussed in 2018 LRDP EIR Impact 3.7-1 (less than significant), the Project would not exacerbate seismic hazards. 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. The campus' Office of Environmental Health and Safety (EH&S) provides guidance for preparing department-level Illness and Injury Prevention Plans (updated in October 2015). The Safety Coordinator develops and maintains the emergency response plan, which must be submitted to the Emergency Preparedness Policy Group for annual review to assure consistency with the campus Emergency Operations Plan, including seismic safety and building evacuation procedures. The emergency procedures incorporated into campus emergency response plans further reduce the hazards from seismic shaking by preparing faculty, staff, and students for emergencies. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

a,iii) See the discussion in criterion (c) below.

a,iv) As stated on page 3.7-15 of the 2018 LRDP EIR, the potential for landslides within the UC Davis campus is low because of the lack of significant slopes and acting gravitational forces. The project site, which is located on a topographically flat site on the central campus, would not be subject to landslides. Therefore, this issue is not relevant to the Project.

b) 2018 LRDP EIR Impact 3.7-3(less than significant) identified the potential for 2018 LRDP construction activities to disturb soils and result in erosion or loss of top soil. The 6.6-acre project site is located on Sycamore Series (S) soils (2018 LRDP EIR Exhibit 3.7-1), which are well drained and comprised of silt loam and silty clay loam. Soil characteristics include: moderately slow permeability and slow surface water runoff, and low erosion hazard (2018 LRDP EIR Exhibit 3.7-3). However, there is an elevated risk of erosion associated with construction activity.

Consistent with the 2018 LRDP, the Project would have to comply with relevant National Pollutant Discharge Elimination System (NPDES) permits, including the General Permit for Storm Water Discharges Associated with Construction Activity (General Construction Permit) and the General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (Phase II Small MS4 Permit), which require soil erosion control measures. As described in 2018 LRDP EIR Impact 3.7-3, the regulatory environment for building construction and stormwater control provides adequate protection against soil erosion during and as a result of construction. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

As described in 2018 LRDP EIR Impact 3.7-4 (less than significant with mitigation), the Project would redevelop the project site and would involve changes to the stormwater infrastructure at the site. While the 2018 LRDP projects would be regulated by the Phase II Small MS4 Permit program, this program would not necessarily reduce or eliminate the collection of flows during high precipitation events or during wet times of the year. Large quantities of overland flow could result in rill or gully erosion and decrease soil stability and productivity. As required by 2018 LRDP EIR Mitigation Measure 3.7-4, UC Davis conducted a drainage study for the Project site and has designed the Project to include the necessary onsite stormwater detention facilities with appropriate sizing for anticipated storm events. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required. .

c) As discussed in 2018 LRDP EIR Impact 3.7-2 (less than significant), the UC Davis campus is located in a seismically active area with soils that could be susceptible to liquefaction and structural settlement in the event of an earthquake. The project site is located on Sycamore Series (S) soils (2018 LRDP EIR Exhibit 3.7-1), which are well drained and comprised of silt loam and silty clay loam. Soil characteristics include: moderately slow permeability and slow surface water runoff, and low erosion hazard. Campus policy requires compliance with the CBC and the University of California Seismic Safety Policy. The CBC requires that a geotechnical investigation that addresses the potential for liquefaction, lateral spreading, and other types of ground failure be performed to provide data for the architect and/or engineer to responsibly design the Project. Per the Project's geotechnical investigation, the project is designed in compliance with the CBC and the University of California Seismic Safety Policy. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

   As disclosed in 2018 LRDP EIR Impact 3.7-6 (less than significant), subsidence on campus related to groundwater withdrawals from the shallow/intermediate aquifers has been observed and documented. While groundwater extraction from the shallow/intermediate aquifer is not expected to increase with implementation of the Project, continued long-term use of this water for campus needs will continue to promote regional subsidence trends. The regional nature of this subsidence is not expected to have localized, acute effects on individual structures or infrastructure. Additionally, clay compaction from groundwater withdrawal would be mitigated through compliance with the CBC, which requires geotechnical investigations and appropriate engineering measures including excavation and placement of fill, where appropriate. Per the Project's geotechnical investigation, the project is designed in compliance with the CBC. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

d) As disclosed in 2018 LRDP EIR Impact 3.7-5 (less than significant), UC Davis is host to several soil units with a high shrink-swell potential. The project site is located on Sycamore Series (S) soils (2018 LRDP EIR Exhibit 3.7-1), which have low to moderate shrink-swell potential. Shrinking and swelling can result in differential ground movement, which can cause damage to building foundations. However, projects implemented under the 2018 LRDP are subject to compliance

with the CBC, including the provision for a pre-development geotechnical investigation and implementation of structural design features to eliminate weak soil characteristics would result in a less-than-significant impact related to hazardous soil characteristics. The campus Office of Design and Construction Management also requires geotechnical investigations for every applicable project managed by that office, and the UC Davis Campus Design Guide incorporates guidelines for geotechnical investigations, including estimated settlement. Per the Project's geotechnical investigation, the project is designed in compliance with the CBC and the UC Davis Campus Design Guide. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

e) Although 2018 LRDP EIR Impact 3.7-7 (less than significant) addresses replacement or construction of new septic systems, that impact is related to a few areas of west campus, south campus, and Russell Ranch. The project site is located on central campus, which is served by the campus wastewater treatment system. No septic tanks or alternative wastewater disposal systems are included in the Project. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

f) As discussed on page 3.7-15 of the 2018 LRDP EIR, the UC Davis campus, including the project site, is underlain by quaternary alluvium from the Holocene period that is generally less than 10,000 years old. This alluvium consists of sand, silt, and gravel deposited in fan, valley fill, terrace, or basin environments. These alluvial deposits contain vertebrate and invertebrate remains of extant, modern taxa, which are generally not considered paleontologically significant. The project site is developed and has been subject to historical disturbance of the land, and therefore is unlikely to yield heretofore unknown or undiscovered paleontological resources during project development. Moreover, the UC Davis campus is situated within the Sacramento/Central Valley, which does not have any notable bedrock outcroppings. The soils of the area are deep, unconsolidated, alluvial units with a low likelihood of producing fossils. Therefore, the Project would have no impacts related to paleontological resources. Therefore, this issue is not relevant to the Bainer Hall and Chemistry Complex Addition and Renovation Project.

4.5.8 Greenhouse Gas Emissions and Climate Change

Section 3.8 of the 2018 LRDP EIR explains the physical scientific basis of greenhouse gas (GHG) emissions and climate change, presents regulatory setting and significance criteria, describes the analysis methodology, presents the GHG sources and emissions associated with construction activities and campus operations, and evaluates the various types of adverse climate change-related effects on the environment.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Greenhouse Gas Emissions Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Yes	No	No	N/A
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose or reducing the emissions of greenhouse gases?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a) 2018 LRDP EIR Impact 3.8-1 (less than significant) discloses that the 2018 LRDP would result in increased GHG emissions caused by increases to sources such as construction activity, on-road VMT, building energy consumption, wastewater, and new stationary sources. The 2018 LRDP would result in UC Davis campus emissions four percent below 1990 levels by 2020 and 59 percent below 1990 levels by 2030, which exceeds the state GHG reduction targets proportionally applied to UC Davis. The analysis of GHG emissions in 2018 LRDP EIR Impact 3.8-1 determined that, with implementation of the UC Sustainable Practices Policy at UC Davis and the sustainability actions outlined in the UC Davis Climate Action Plan, the 2018 LRDP "Scope 1" and "Scope 2" emissions would be reduced to zero by 2025. Scope 1 emissions include all direct GHG emissions from sources controlled by the reporting entity, including the campus vehicle fleet, backup generators, and fugitive emissions from processes. Scope 2 emissions include the GHG emissions associated with purchased electricity. If all GHG reductions to achieve the targets in the UC Davis Sustainable Practices Policy cannot be met through on-site projects, UC Davis would purchase carbon offsets to achieve the GHG reduction targets. However, UC Davis plans to prioritize reducing emissions through on-site projects before it purchases any carbon offset credits to achieve the GHG targets established by the UC Davis Sustainable Practices Policy. The 2018 LRDP EIR determined that both the 2020 and 2030 emissions would meet and exceed the state's GHG reductions goals of reducing GHG emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030, as proportionally applied to UC Davis and would be consistent with the statewide GHG reduction goals and would not considerably contribute to climate change.

   Construction and operation of the Bainer Hall and Chemistry Complex Addition and Renovation would result in GHG emissions from demolition, construction vehicle trips, construction equipment, building energy use, and mobile sources. Emissions associated with energy use would include the consumption of natural gas for space and water heating (through the Central

Plant), and the consumption of electricity, including electricity associated with the treatment and conveyance of water.

The Project would include multiple design elements that would reduce overall building energy use and associated GHG emissions. These design elements would help achieve the Project goal of being certified, at a minimum, as a LEEDv4 Silver building and achieve building energy efficiency of 20 percent better than 2016 Title 24 Energy Efficiency Standard. These design elements include:

- Architectural designs that promote daylighting of classrooms to reduce energy use associated with lighting and space heating.
- Use of building materials in the building envelope that reduce the building cooling load and overall building energy use, while increasing thermal comfort.
- Use of energy-efficient lighting and equipment in the building to reduce the building's overall energy demand.

As discussed in 2018 LRDP EIR Impact 3.8-1, UC Davis is working to reduce GHG emissions in line with UC Sustainable Practices Policies. UC Davis campus personnel have calculated the GHG reduction potential of the following proposed projects:

- Energy efficiency projects, including the Active Commissioning Enterprise, and Phase 3 of the Smart Lighting Initiative, with estimated emission reductions of 14,211 $MTCO_2e$/year.
- The District Heating Infrastructure Steam to Hot Water Conversion Project, with estimated emission reductions of 17,179 to 19,994 $MTCO_2e$/year, depending on the technology selected.
- Potential future on-site renewable energy generation through installation of solar PV systems.
- Green energy purchases to replace existing fossil fuel energy sources (biomethane purchases and green electricity purchases), with estimated emission reductions of up to 69,509 $MTCO_2e$/year.
- Electrification of the Unitrans bus fleet, with estimated emission reductions of 1,079 $MTCO_2e$/year.

Although the Project would result in GHG emissions, through the initiatives to reduce campus-wide GHG emissions, project emissions related to energy use would be reduced or offset over time. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

b) As discussed in 2018 LRDP EIR Impact 3.8-2, UC Davis lies within the Sacramento Area Council of Government (SACOG) planning area. SACOG is tasked with implementing the 2035 MTP/SCS, which includes per-capita GHG targets for the region. As noted in Section 3.16, "Transportation, Circulation, and Parking," of the 2018 LRDP EIR, the modeling conducted for the 2018 LRDP, includes SACOG's planned transportation projects under the 2035 MTP/SCS. The analysis concluded implementation of the 2018 LRDP would not limit SACOG's ability to implement projects under the 2035 MTP/SCS or reach the GHG targets in the plan.

As discussed in Sections 4.1 through 4.4 of this environmental checklist, the Project is consistent with the 2018 LRDP. As discussed under a), above, UC Davis has chosen to implement a series of policies through the 2018 LRDP which would reduce campus GHG emissions and achieve the targets established by the UC Sustainability Practices Policy. Through

the implementation of this policy, the 2018 LRDP would meet or exceed the statewide targets set for 2030 and would not impede on progress towards the long-term GHG reduction goal established for 2050. As part of the implementation of to the 2018 LRDP:

- Existing campus facilities would be redeveloped to be more energy efficient, resulting in less energy use and generating less emissions than existing conditions.
- New on-campus facilities would be developed to meet or exceed energy efficiency standards with a commitment to achieve LEEDv4 Silver, thereby resulting in fewer emissions from electricity and natural gas use compared to similar new facilities built elsewhere in the states.
- New solar generation facilities would be operated on campus, off-setting emissions associated with electricity generation.
- Land use and planned infrastructure would be developed to discourage personal vehicle use, such as through limited parking for personal vehicles and shared vehicle provisions, as well as the construction of bicycle and transit infrastructure, thereby reducing transportation-related emissions.
- Any remaining GHG emissions that need to be reduced after the physical implementation of the 2018 LRDP to meet UC Davis' GHG reduction targets would be abated by verified carbon offset purchases made by UC Davis.

Implementation of these strategies would support the University's efforts in reaching the UC Sustainable Practices Policy target of climate neutrality for Scope 1 and 2 emissions by 2025 and climate neutrality for Scope 3 emissions by 2050, which are in line with the University of California Carbon Neutrality Initiative and the UC Davis Climate Action Plan.

The Project is consistent with the 2018 LRDP, as evaluated in the 2018 LRDP EIR Impact 3.8-1 and discussed in response a) above, the Project would not conflict with University of California Sustainable Practices Policy, the UC Davis Climate Action Plan, or SACOG's 2035 MTP/SCS. Therefore, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose or reducing the emissions of GHGs. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required

4.5.9 Hazards and Hazardous Materials

Section 3.9 of the 2018 LRDP EIR addresses the hazards and hazardous materials effects of campus growth under the 2018 LRDP by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Hazards & Hazardous Materials Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Yes	No	No	N/A
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?	Yes	No	No	Yes
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Yes	No	No	N/A
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?	Yes	No	No	N/A
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?	Yes	No	No	N/A
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?	Yes	No	No	N/A
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Yes	No	No	Yes
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?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a) 2018 LRDP EIR Impact 3.9-1 (less than significant) determined that construction and operation of the development identified in the 2018 LRDP would result in transport, use, and disposal of hazardous materials to and from the plan area. However, adherence to existing regulations and compliance with safety standards would result in a less-than-significant impact.

Hazardous Chemicals Use During Construction. Project-related construction activities would temporarily increase the regional transport, use, storage, and disposal of hazardous materials and petroleum products (such as diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals) that are commonly used at construction sites. Hazardous waste generated during construction may consist of welding materials, fuel and lubricant containers, paint and solvent containers, and cement products containing strong basic or acidic chemicals.

Because of their age, buildings on the project site proposed for renovation or demolition may contain hazardous materials including asbestos and lead. Campus policy requires that the buildings be surveyed for potential contamination before any demolition can occur.

SWRCB Construction General Permit (2009-0009 DWQ) requires spill prevention and containment plans to avoid spills and releases of hazardous materials and wastes into the environment. Inspections would be conducted to verify consistent implementation of general construction permit conditions and best management practices (BMPs) to avoid and minimize the potential for spills and releases, and of the immediate cleanup and response thereto. BMPs include, for example, the designation of special storage areas and labeling, containment berms, coverage from rain, and concrete washout areas.

Hazardous Materials Transport. Although the transportation of hazardous materials could result in accidental spills, leaks, toxic releases, fire, or explosion, the USDOT Office of Hazardous Materials Safety prescribes strict regulations for the safe transportation of hazardous materials, as described in Title 49 of the CFR. These standard accident and hazardous materials recovery training and procedures are enforced by the state and followed by private state-licensed, certified, and bonded transportation companies and contractors.

Hazardous Materials Use During Operation. Workers could be exposed to hazardous chemicals through inhalation, skin absorption (contact), ingestion, and injection (cuts). UC Davis policies and procedures as well as Occupational Safety and Health Act (Cal/OSHA) requirements address the procurement, handling, and disposal of carcinogenic, controlled, volatile, flammable, and explosive substances. Safety Services is charged with implementing measures, directly and through campus departments, designed to ensure compliance with applicable laws and regulations.

Radioactive Materials. Radioactive materials are used within the project site for academic and research purposes. The Project would not increase use of radioactive material over baseline conditions. Any laboratory chemical waste would have been collected according to campus hazardous waste policy and disposed of appropriately by Environmental Services Facility staff. The use of radioactive or biohazardous materials would continue within the Chemistry Complex Buildings. However, all use of radioactive or biohazardous materials would comply with Campus policies. No impact related to use of radioactive or biohazardous materials would occur.

The Project would adhere to existing regulations and compliance with the safety procedures mandated by applicable federal, state, university, and local laws and regulations would minimize the risks resulting from the routine transportation, use, storage, or disposal of hazardous materials or hazardous wastes. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

b) As discussed in 2018 LRDP EIR Impact 3.9-3 (less than significant), the 2018 LRDP includes development of academic and administrative land uses, campus infrastructure, and student housing in close proximity to the UPRR line and I-80, which are used to transport potentially hazardous and flammable materials. Construction and operation of the 2018 LRDP would not increase the hazard associated with operation of the highway and railroad, but would increase the number of people potentially exposed to hazardous conditions. However, the Project site is located over a quarter mile from I-80 and the UPRR line and does not include any housing. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

   Consistent with 2018 LRDP EIR Impact 3.9-2 (less than significant with mitigation), demolition of existing structures could expose construction personnel and the public to hazardous substances present in the soil or in built structures, which could pose health and safety risks. Construction workers and nearby workers and/or future residents could potentially be exposed to airborne lead-based paint dust, asbestos fibers, and/or other contaminants because of demolition activities associated with redevelopment of the UC Davis campus. Consistent with 2018 LRDP EIR Impact 3.9-2, renovation activities would utilize hazardous materials such as fuel for construction equipment, paints and solvents during construction, and cleaners during operation of the building. These materials would be used in low quantities and would not be expected to pose a hazard because they are commonly utilized.

   Federal, state, and local regulations have been developed to address potential impacts related to the handling and disposal of hazardous materials during demolition. Potential impacts would be minimized through adherence to regulatory standards (such as Cal/OSHA regulations) that prescribe specific methods of material characterization and handling, as described in 2018 LRDP EIR Impact 3.9-2. Furthermore, consistent with 2018 LRDP EIR Mitigation Measures 3.9-2a, soil conditions on-site shall be confirmed before development and any identified contamination shall be appropriately remediated. Consistent with 2018 LRDP EIR Mitigation Measure 3.9-2b, UC Davis shall establish a contingency plan that describes the necessary actions to be taken if evidence of contaminated soil or groundwater is encountered during construction, including cessation of work until the potential contamination is characterized and properly contained or remediated. Consistent with 2018 LRDP EIR Mitigation Measure 3.9-2c, UC Davis shall minimize the potential for release of potentially hazardous construction materials during demolition by requiring that asbestos-containing building materials, lead-based paint, and other hazardous substances in building components are identified, removed, packaged, and disposed of in accordance with applicable state laws and regulations. Before abatement/ demolition activities, an asbestos/ demolition notification shall be submitted to the YSAQMD. Following implementation of regulatory requirements and implementation of these measures would minimize the risk of an accidental release of hazardous substances that could adversely affect human health or the environment. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required.

c) Consistent with 2018 LRDP EIR Impact 3.9-4 (less than significant), hazardous materials and waste could be handled within 0.25 mile of an existing or proposed school as a result of the Project. However, handling, storage, and disposal of hazardous materials associated with the Project would be subject to campus safety programs and procedures. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

d) The project site is not located on a contaminated site pursuant to Government Code Section 65962.5 (2018 LRDP EIR Impact 3.9-2). Two sites of potential concern were identified within the 2018 LRDP planning area: the UC Davis-USDA Weed Control Lab and the Lab for Energy Related Health Research. Both of these sites are under the jurisdiction of state agencies, and are

currently under remediation and subject to development of Waste Discharge Requirements, respectively. The Project would not disturb these sites and activities involving the assessment, cleanup, and monitoring of these sites would continue regardless of approval of the Project. Furthermore, to address the potential for undocumented contamination that has not been characterized or remediated at the project site, UC Davis shall implement 2018 LRDP EIR Mitigation Measures 3.9-2a, soil conditions on-site shall be confirmed before development and any identified contamination shall be appropriately remediated. Consistent with 2018 LRDP EIR Mitigation Measure 3.9-2b, UC Davis shall establish a contingency plan that describes the necessary actions to be taken if evidence of contaminated soil or groundwater is encountered during construction, including cessation of work until the potential contamination is characterized and properly contained or remediated. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required.

As discussed in 2018 LRDP EIR Impact 3.9-3, the 2018 LRDP includes development of academic and administrative land uses, campus infrastructure, and student housing in close proximity to the UPRR line, which is used to transport potentially hazardous and flammable materials. Construction and operation of the 2018 LRDP would not increase the hazard associated with operation of the highway and railroad, but would increase the number of people potentially exposed to hazardous conditions. However, the project site is located over a quarter mile from I-80 and the UPRR line and does not include any housing. Therefore, construction and operation of the Project would not increase the hazard associated with these transportation corridors.

e) As shown in 2018 LRDP EIR Exhibits 3.9-2 and 3.9-3 of the 2018 LRDP EIR, the project site is not within any of the airport safety compatibility zones for the University Airport or the Yolo County Airport (2018 LRDP EIR Impact 3.9-5). Therefore, the Project would not conflict with airport operations. This issue is not relevant to this Project.

f) As stated on page 3.9-29 of the 2018 LRDP EIR, the University Airport is a public use airport, not a private airstrip. There are no private airstrips located within 2 miles of the plan area. As a result, impacts related to safety hazards associated with the operation of a private airstrip would not occur. This issue is not relevant to this Project.

g) The Project could result in short-term, temporary impacts to street traffic because of the presence of construction vehicles or potential extension of construction activities into the right-of-way. This could result in a temporary reduction in the number of lanes or temporary closure of certain street segments. Any such impacts would be limited to the construction period and would affect only adjacent streets or intersections (2018 LRDP EIR Impact 3.9-6). The Project would not modify the existing central campus roadway network and is unlikely to interfere with response times of emergency vehicles during operation. As required by 2018 LRDP EIR Mitigation 3.9-6, UC Davis shall prepare and implement a site-specific construction traffic management plan for any project-related construction within existing roadways. The plan would adequately address any potential conflicts with emergency access or evacuation routes during construction by communicating proposed lane and road closures with first responders and allowing first responders to plan accordingly to ensure that emergency response times and maintain adequate emergency access. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required.

h) As stated on page 3.9-29 of the 2018 LRDP EIR, the project site is not located in or near a fire hazard severity zone established by CAL FIRE. The potential for wildland fire is low. The Project would not change this; no new or substantially more severe impacts would occur and no mitigation would be required.

4.5.10 Hydrology and Water Quality

Section 3.10 of the 2018 LRDP EIR addresses the hydrology and water quality effects of campus growth under the 2018 LRDP by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Hydrology & Water Quality Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
a) Violate any water quality standards or waste discharge requirements?	Yes	No	No	Yes
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)?	Yes	No	No	Yes
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?	Yes	No	No	Yes
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?	Yes	No	No	Yes
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	Yes	No	No	Yes
f) Otherwise substantially degrade water quality?	Yes	No	No	Yes
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?	Yes	No	No	N/A
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	Yes	No	No	N/A

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?	Yes	No	No	N/A
j)	Inundation by seiche, tsunami, or mudflow?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a,f) Construction. 2018 LRDP EIR Impact 3.10-1 (less than significant) found that construction on campus under the 2018 LRDP would not contribute substantial loads of sediment or other pollutants to stormwater runoff. Construction on campus is covered under the NPDES statewide General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activity (General Permit). As part of the General Permit, campus construction projects managed by outside contractors and disturbing over one acre (including the Project) must implement Stormwater 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 stormwater runoff. The UC Davis campus is required to comply with the NPDES state-wide General Permit requirements. This regulatory framework provides adequate protection from stormwater contamination and provides water quality protection from construction activities on campus. The Project would result in grading and excavation, as well as use of construction lubricants, which could enter stormwater runoff. However, with adherence to BMPs and development of a SWPPP, these contributions would not be substantial. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

Operation. As described in 2018 LRDP EIR Impact 3.10-2 (less than significant), new impervious surfaces created by development of the 2018 LRDP would result in new sources of stormwater runoff and contamination, as well as an increased risk of erosion and sedimentation. However, campus development, including the Project, is covered under the Phase II Small MS4 Permit, which requires management of long-term stormwater discharges and implementation of pollution protection measures. These management practices are enforced under the campus stormwater management program and ensure long-term protection related to stormwater pollution. The Project has been designed consistent with a drainage evaluation completed for the stormwater management system (2018 LRDP EIR Mitigation Measure 3.7-4). Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required.

As described in 2018 LRDP EIR Impact 3.10-3 (less than significant), expansion of the campus population and campus facilities under the 2018 LRDP would result in an increase in the amount of wastewater generated, however the types of chemical constituents in wastewater would remain approximately the same. The Project would contribute to this increase. By continuing to adhere to the provisions of NPDES permit CA0077895, the wastewater treatment plant would continue to comply with Waste Discharge Requirements (WDRs) which would reduce the impact to less than significant. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

b) Deep Aquifer. As described in 2018 LRDP Impact 3.10-4 (less than significant), UC Davis will continue to draw domestic water from the six campus wells in the deep aquifer, during Term 91 conditions and to supplement water from the Woodland-Davis Clean Water Agency, to meet increased demand attributable to campus growth. The Project would contribute to this demand, within the limits of the demand projections identified in the 2018 LRDP EIR. The Project is consistent with the land use designation and density identified in the 2018 LRDP, and it was

determined that campus use of groundwater supplies, including for the Project, would not substantially affect the available supplies within or ability for recharge of the deep aquifer. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

Shallow/Intermediate Aquifer. As described in 2018 LRDP EIR Impact 3.10-5 (less than significant), implementation of the 2018 LRDP is not expected to increase groundwater withdrawals from the shallow/intermediate aquifer; however, recharge infiltration patterns could be affected by the increase in development. Consistent with Mitigation Measure 3.10-6 of the 2018 LRDP EIR (2018 LRDP EIR Mitigation Measure 3.7-4), which requires implementation of project-level storm controls, the Bainer Hall and Chemistry Complex Addition and Renovation Project includes stormwater treatment areas throughout the project site to capture and treat stormwater runoff from the impervious paving and roof surfaces. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required.

c,e) 2018 LRDP EIR Impact 3.10-6 (less than significant with mitigation) found that new development on campus would result in an overall increase in impervious surfaces and produce changes to site-specific stormwater infrastructure. The Project would contribute to this impact by renovating the Bainer Hall and Chemistry Complex with similar impervious structures. Consistent with Mitigation Measure 3.10-6 of the 2018 LRDP EIR (2018 LRDP EIR Mitigation Measure 3.7-4), which requires implementation of project-level storm controls, the Bainer Hall and Chemistry Complex Renovation includes stormwater treatment areas throughout the project site to capture and treat stormwater runoff from the impervious paving and roof surfaces. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required.

Water quality impacts related to stormwater runoff are evaluated in checklist item a, f), above.

g,h) As described in 2018 LRDP EIR Impact 3.10-7 (less than significant with mitigation), the 2018 LRDP may involve the construction of additional academic and administrative facilities within the far western portion of west campus. Should that occur and in the event of a 100-year flood, there would be increased exposure to the risk of loss and flood damage. The Project site is not located within a 100-year flood hazard area (see 2018 LRDP EIR, Exhibit 3.10-2, Designated 100-Year Flood Zones). The Project would not place any housing or structures within a 100-year flood hazard area. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

i) UC Davis is located within the inundation area of the Monticello Dam, such that up to two meters of water would be present in certain areas of campus for a period of approximately 24 hours. However, the dam structure is carefully managed by state and federal agencies and is capable of withstanding strong seismic shaking. As identified in 2018 LRDP EIR Impact 3.10-8, the risk of inundation of any portion of the campus, including the project site, from a failure of the Monticello Dam is low. The Project would not change the risk of flooding nor build new housing within an area subject to flooding. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

j) The campus is not subject to inundation by seiche, tsunami, or mudflow. The campus is generally flat and is not located near any large water bodies. Therefore, this issue is not relevant to the Bainer Hall and Chemistry Complex Addition and Renovation Project.

4.5.11 Land Use and Planning

Section 3.11 of the 2018 LRDP EIR addresses the land use and planning effects of campus growth under the 2018 LRDP by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Land Use & Planning Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
a) Physically divide an established community?	Yes	No	No	N/A
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?	Yes	No	No	N/A
c) Result in development of land uses that are substantially incompatible with existing adjacent land uses or with planned uses?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a) There is no housing on the project site and the Project would have no potential to physically divide an established community. Therefore, this issue is not relevant to the Bainer Hall and Chemistry Complex Addition and Renovation Project.

b,c) UC holds jurisdiction over campus-related projects and projects carried out by UC Davis would be consistent with the 2018 LRDP (2018 LRDP EIR Impact 3.11-1). The Project would result in new academic classroom buildings consistent with the *Academic & Administrative* designation for the project site, which is currently developed with academic buildings and parking and surrounded by academic and administrative facilities on the core campus. The Project would maintain the compact central campus footprint, enhance student interaction, conserve land, and utilize existing building corridors, consistent with the intent of the 2018 LRDP. In addition, the Project does not include any housing and would not contribute to 2018 LRDP EIR Impact 3.3-6 regarding land use compatibility with off-site sources of toxic air contaminants and ultrafine particles. The Project is similar to and therefore compatible with surrounding central campus academic and administrative land uses. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

4.5.12 Mineral Resources

Section 3.7, "Geology, Soils, and Seismicity," of the 2018 LRDP EIR briefly addresses mineral resources issues under the 2018 LRDP by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Mineral Resources Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
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?	Yes	No	No	N/A
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?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a,b) As described on page 3.7-15 of the 2018 LRDP EIR, the LRDP plan area, including the project site, is located in MRZ-1, which is an area where there is sufficient information to determine that no significant mineral deposits (specifically aggregate rock) are present. Additionally, the LRDP plan area, including the project site, is not indicated as a locally important mineral resource site. The Project would not result in the loss of availability of mineral resources. Therefore, this issue is not relevant to the Project.

4.5.13 Noise

Section 3.12 of the 2018 LRDP EIR addresses the noise effects of campus growth under the 2018 LRDP by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Noise Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
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?	Yes	No	No	Yes
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Yes	No	No	N/A
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Project?	Yes	No	No	N/A
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the Project?	Yes	No	No	Yes
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?	Yes	No	No	N/A
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?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a,c,d) Construction Noise. 2018 LRDP EIR Impact 3.12-1 (less than significant with mitigation) determined that implementation of the 2018 LRDP would result in construction activities, that although would be intermittent and temporary in nature, may still result in noise levels that impact nearby noise sensitive land uses and could result in human disturbance. The 2018 LRDP would necessitate construction activities near adjacent, existing development, including on-campus facilities and could exceed acceptable noise levels or require nighttime construction.

Project-related construction activity would result in temporary noise increases on and near the project site, which is on the central campus and surrounded by academic and administrative facilities. Construction of the Bainer Hall portion of the Project is anticipated to occur over a sixteen-month period, beginning as early as August 2019. Construction of the Chemistry Complex

portion of the project is anticipated to begin as early as March 2019, with the last project anticipated to be completed in June 2022 (see Table 3-1). Construction activity would involve the demolition of existing facilities on the project site and the construction of new facilities using conventional construction techniques and equipment. As a result, construction activity would result in a noise level increase on and surrounding the project site, although noise level increases would be temporary and would vary considerably depending the construction phase. No blasting or pile driving would occur.

2018 LRDP EIR Mitigation Measure 3.12-1 requires construction noise minimization measures. Mitigation Measure 3.12-1 limits the hours when construction activity can take place (i.e., between 7:00 a.m. and 7:00 p.m. on weekends and between 8:00 a.m. and 8:00 p.m. on weekends, and not during finals week), requires the use of noise control technologies (e.g. noise-reduction intake and exhaust mufflers and engine shrouds), and strategies to reduce potential impacts on sensitive receptors (e.g. locating equipment as far as possible from nearby noise-sensitive land uses). Project implementation of Mitigation Measure 3.12-1 would serve to reduce construction noise impacts on sensitive receptors to prevent the exposure of noise-sensitive receptors to construction noise that exceeds the significance criterion of 80 dB L_{eq}. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required.

Operational Noise – Stationary Sources. 2018 LRDP EIR Impact 3.12-2 (less than significant with mitigation) determined that new buildings under the 2018 LRDP may include new stationary noise sources and equipment (e.g., mechanical equipment, backup generators), and loading docks that, depending on location of new and existing sensitive land uses, could result in noise levels that disturb people while sleeping or substantial increases in noise over existing levels.

Because the Project involves renovations to existing structures, operational noise would not be expected to result in a substantial increase over ambient conditions. Noise sources associated with the proposed building would include the increased number of people at the site, roof-mounted mechanical equipment, and traffic noise. The increased number of employees would not likely be noticeable as the employees would work inside the buildings. The roof-mounted equipment would be enclosed to ensure that ambient noise levels are not raised in the project vicinity. The Project-related operational noise impacts would be reduced to less than significant by application of 2018 LRDP EIR Impact and Mitigation 3.12-2. Therefore, no new or substantially more severe impacts would occur and no new mitigation would be required.

Operational Noise - Traffic Noise. 2018 LRDP EIR Impact 3.12-4 (less than significant) determined that although long-term population growth and development under the 2018 LRDP would result in some increases in traffic on local and regional roadways, the future roadway noise volumes would not exceed the criterion of 70 dB CNEL.

The Project would provide workspace for an estimated new 15 employees, which would contribute to increases on local and regional roads. Generally, a doubling of a noise source (such as twice as much traffic) is required to result in an increase of 3 dB, which is perceived as barely noticeable by people and a 5 dB increase in distinctly noticeable (Egan 2007:21). Therefore, an increase in 5 dB or more in traffic noise would be considered substantial. Consistent with 2018 LRDP EIR Impact 3.12-4, the vehicle trips associated with 15 additional employees proposed under the Project would not increase traffic noise levels along area roadways by 5 dB or more and, therefore, not be considered a substantial increase. Further, assuming a typical exterior-to-interior noise reduction of 25 dB (Caltrans 2013:P. 7-17), resultant traffic noise levels would not exceed the interior noise standard of 45 dB at any residential land uses located along affected roadway segments. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

b) As discussed on page 3.12-20 of the 2018 LRDP EIR, pile driving, blasting, or other substantial vibration-inducing construction equipment or techniques are not anticipated to be necessary during construction of the land uses identified under the 2018 LRDP, Consistent with this, the Project would not involve pile driving, blasting, or other substantial vibration-inducing construction equipment or techniques for demolition or construction activities. Thus construction-related ground vibration and ground-borne noise in exceedance of the significance thresholds would not be generated. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

Also discussed on 2018 LRDP page 3.12-20 of the 2018 LRDP EIR, the 2018 LRDP would not involve the development of uses that would result in a substantial increase in rail or heavy truck traffic in the area. Some additional truck deliveries (primarily light- to medium- duty trucks) could be associated with new academic land use designations and/or uses supporting on-site residents. However, vibration associated with such trucks would be localized and similar to existing conditions because of their sporadic nature along a given roadway and thus would not be considered a substantial generator of operational vibration. Consistent with this, the Project would not be expected to increase existing truck deliveries. As a result, ground vibration levels in exceedance of the significance thresholds are not anticipated as a result of the Project. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

Finally, 2018 LRDP EIR Impact 3.12-3 discloses that although the 2018 LRDP would result in new development, it would not result in any increase in airport, rail, or stadium noise. However, the 2018 LRDP planned development could locate new sensitive land uses in close proximity (i.e., within 750 feet) to existing rail lines, potentially resulting in sleep disturbance at these new uses. However, the project site is not within 750 feet of existing rail lines and would not involve construction of housing. Therefore, this issue is not relevant to the Bainer Hall and Chemistry Complex Addition and Renovation Project.

e) 2018 LRDP EIR Impact 3.12-3 discussed the potential for additional development on campus to result in the exposure of sensitive receptors to existing noise and vibration levels, including the University Airport. The 2018 LRDP would not place any student housing within the 55 dBA CNEL contour of the airport and the 2018 LRDP, including the Project, does not propose changes to University Airport operations that would result in increases in associated airport noise. The Project would not expose people to excessive noise levels associated with this public use airport because project site is located approximately 1.75 miles east of the University Airport and outside of the airport's 55 dB CNEL (UC Davis 2018a). Therefore, this issue is not relevant to this Project.

f) The University Airport is a public use airport, not a private airstrip. No other private airport facilities are within the immediate vicinity of the campus. This issue is not relevant to this Project.

4.5.14 Population and Housing

Section 3.13 of the 2018 LRDP EIR addresses the population and housing effects of campus growth under the 2018 LRDP by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Population & Housing Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
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)?	Yes	No	No	N/A
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	Yes	No	No	N/A
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	Yes	No	No	N/A
d) Create a demand for housing that cannot be accommodated by local jurisdictions?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a,d) The direct and indirect inducement of population growth and housing demand caused by implementation of the 2018 LRDP is analyzed in 2018 LRDP EIR Impact 3.13-1 (significant and unavoidable). As identified in the 2018 LRDP EIR, while student housing is tight, with low local (City of Davis) vacancy rates, adequate housing opportunities in the overall region are available and would continue to be available during implementation of the 2018 LRDP such that new employees associated with the 2018 LRDP would not necessitate the construction of new housing. In addition, while the 2018 LRDP would induce population growth in the region; the projected increase in employment at UC Davis under the 2018 LRDP is well within existing regional growth projections and projected housing stock, and as a result is not considered substantial. It is noted that over 5,000 beds of student housing are planned to be constructed in the near term (West Village and Orchard Park); project level analyses of these projects are included in the 2018 LRDP EIR. However, the Project would not provide for student enrollment growth. The Project-related increase of 15 staff is within the growth and housing demand contemplated by the 2018 LRDP EIR. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

b,c) No housing units exist on the project site. The Project would not displace any existing housing units or people. Therefore, this issue is not relevant to the Bainer Hall and Chemistry Complex Addition and Renovation Project.

4.5.15 Public Services

Section 3.14 of the 2018 LRDP EIR addresses the public services effects of campus growth under the 2018 LRDP by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Public Services Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
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?	Yes	No	No	N/A
ii) Police protection?	Yes	No	No	N/A
iii) Schools?	Yes	No	No	N/A
iv) Parks?	Yes	No	No	N/A
v) Other public facilities?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a) As identified by 2018 LRDP EIR impacts 3.14-1 and 3.14-2 (less than significant), implementation of the 2018 LRDP could increase the demand for fire and police services. The Project-related increase of 15 employees is within of the number of employees anticipated in the 2018 LRDP and would not result in the need for additional fire or police protection facilities. Demand for additional fire or police protection facilities associated with new employees was analyzed in the 2018 LRDP EIR. No new or substantially more severe impacts would occur and no mitigation would be required.

As identified in 2018 LRDP EIR Impact 3.14-3 (less than significant), the increase in campus population that is expected to occur under the 2018 LRDP would result in an increased demand for schools; the Project would modestly contribute to this demand (by providing new employment which could bring new families to the area). However, enrollment for DJUSD has declined in 7 of the last 11 years and existing schools would have adequate capacity to accommodate the increase in students. No new facilities would be needed. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

As identified in 2018 LRDP EIR Impact 3.14-4 (less than significant), the increase in campus population that is expected to occur under the 2018 LRDP could result in an increased demand

for public facilities such as libraries and parks; the Project would contribute to this demand. However, this increase in demand is covered as part of the 2018 LRDP and the Project would not result in the need for new or expanded public facilities. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

4.5.16 Recreation

Section 3.15 of the 2018 LRDP EIR addresses the environmental effects associated with modifying recreational resources to meet campus growth under the 2018 LRDP by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Recreation Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
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?	Yes	No	No	N/A
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?	Yes	No	No	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a) 2018 LRDP Impacts 3.15-1 and 3.15-2 (less than significant) found that the 2018 LRDP would have a less-than-significant increase in demand for recreation facilities. The Project would increase the campus population by up to 15 employees, consistent with 2018 LRDP growth assumptions, which would contribute to demand and use for parks and recreation facilities on and off campus. However, the additional employees are expected to choose residential locations in Davis and throughout the region, with their associated recreational facility use distributed throughout the region. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

b) The project site plan includes pedestrian and bike paths that align with existing central campus pathways. Installation of these pathways would require ground-disturbance, which would result in typical construction-related impacts. These types of impacts are address throughout this environmental checklist (e.g., within Section 3.3, “Air Quality,” Section 3.5, “Biological Resources,” and Section 3.10, “Hydrology and Water Quality”); all of which are considered in the 2018 LRDP EIR. No new or substantially more severe impacts would occur and no new mitigation would be required.

4.5.17 Transportation, Circulation, and Parking

Section 3.16 of the 2018 LRDP EIR addresses the transportation, circulation, and parking effects of campus growth under the 2018 LRDP by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Transportation & Traffic Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
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?	Yes	No	No	N/A
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?	Yes	No	No	Yes
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?	No	N/A	N/A	N/A
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Yes	No	No	Yes
e) Result in inadequate emergency access?	Yes	No	No	Yes
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?	Yes	No	No	Yes

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a,b) Construction of the Project would generate vehicle trips on adjacent roadways, entailing periodic deliveries of building materials, construction equipment trips, and construction labor commute trips. Given the relatively small size of the project site and project elements, it would be expected that there would not be a substantial number of construction-related vehicle trips.

With regard to operations, the Project would add up to 15 staff to the campus. This is expected to slightly increase morning and afternoon peak traffic volumes by up to 15 vehicles during each peak period, assuming that all employees drive individually to the project site.

The 2018 LRDP EIR found that implementation of the 2018 LRDP would cause unacceptable level of service conditions at several on-campus intersections (2018 LRDP EIR Impact 3.16-2). 2018 LRDP EIR Mitigation Measures 3.16-2(a-e) require the UC Davis to implement Transportation Demand Management strategies to reduce vehicle trips, monitor peak hour traffic operations at critical locations, review individual projects to determine if intersection operations degrade to unacceptable levels, and implement physical improvements when intersection operations degrade. However, this LRDP impact is identified as significant and unavoidable for some intersections because it is uncertain whether the mitigation would sufficiently reduce LOS conditions to acceptable levels. Project-related construction and operation traffic would contribute to 2018 LRDP EIR Impact 3.16-2; however, no new or substantially more severe impacts would occur and no new mitigation would be required. This impact was examined in the 2018 LRDP EIR and was addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2018 LRDP. No additional mitigation is available to reduce the Project's contribution to this impact.

The 2018 LRDP EIR determined that implementation of the 2018 LRDP would contribute to existing unacceptable LOS F conditions on portions of I-80 (2018 LRDP EIR Impact 3.16-1). 2018 LRDP EIR Mitigation Measure 3.16-1 requires the campus to implement Transportation Demand Management strategies to reduce vehicle trips on I-80. However, this LRDP impact is identified as significant and unavoidable because, despite implementation of mitigation, unacceptable LOS F conditions will continue to occur along I-80. Project-related construction and operation traffic would contribute to 2018 LRDP EIR Impact 3.16-1; no new or substantially more severe impacts would occur and no new mitigation would be required. This impact was examined in the 2018 LRDP EIR and was addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2018 LRDP. No additional mitigation is available to reduce the Project's contribution to this impact.

c) The Project would result in no change to air traffic patterns. The UC Davis airport is the closest airport and the Project would have no effect on the number of flights or the operation of the airport. This issue is not relevant to this Project.

d) As disclosed in 2018 LRDP EIR Impacts 3.16-3 (less than significant with mitigation), 3.16-4 (less than significant with mitigation), and 3.16-5 (less than significant with mitigation), implementation of the 2018 LRDP would increase automobile, transit, bicycle, and pedestrian trips to, from, and within the UC Davis campus, which would increase the competition for physical space between the modes to meet both operational and safety objectives related to transit. This could increase the risk of collisions. Vehicular access to the project site, located on the central campus, is restricted. However, the site plan identifies ingress and egress for emergency access and ADA access, and the Project would be designed and constructed according to adopted UC Davis standards to minimize traffic hazards. The 2018 LRDP EIR identified several mitigation measures to reduce impacts related to the performance or safety of public transit, bicycle, or pedestrian facilities. Applicable measures, which would be implemented as part of the Bainer Hall and Chemistry Complex project, are:

- Mitigation Measure 3.16-3a: Monitor transit service performance and support transit improvements.

- Mitigation Measure 3.16-3b: Monitor transit-related collisions and implement countermeasures to minimize potential conflicts with transit service and facilities.
- Mitigation Measure 3.16-4: Monitor bicycle-related collisions to implement countermeasures minimizing potential conflicts with bicycle facilities.
- Mitigation Measure 3.16-5: Monitor pedestrian-related collisions implement countermeasures minimizing potential conflicts with pedestrian facilities.

Therefore, no new or substantially more severe impacts would occur and no new mitigation would be required.

e) 2018 LRDP EIR Impact 3.9-6 (less than significant with mitigation) identified that implementation of the 2018 LRDP could interfere with the campus' Emergency Operations Plan through construction-related road closures. Construction of the Project would not any require road closures. A fire lane and one-way vehicular access would be established around the site, moving southward from Hutchison on the east side of the new building, around the south end of the site, and back northward to Hutchison along the west side of the site, thereby ensuring adequate emergency access. In addition, as required by 2018 LRDP EIR Mitigation Measure 3.9-6, UC Davis shall prepare and implement a Construction Traffic Management Plan to adequately address any potential conflicts with emergency access or evacuation routes during construction by communicating proposed lane and road closures with first responders and allowing first responders to plan accordingly to ensure that emergency response times are maintained along with adequate emergency access. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required.

f) As stated in the 2018 LRDP EIR, implementation of the 2018 LRDP would not conflict with any adopted policies, plans, or programs regarding public transit (Impact 3.16-3), bicycle (Impact 3.16-4), or pedestrian (Impact 3.16-5) facilities.

   The 2018 LRDP assumed that student, employee, and on-campus housing growth resulting from its implementation would generate an estimated 4,600 new bicyclists on the UC Davis campus. The Project would require 15 new staff, which would contribute to use of public transit, bicycle, or pedestrian facilities in the project vicinity; this is within the growth contemplated by the 2018 LRDP EIR.

   Implementation of the 2018 LRDP would increase automobile, transit, bicycle, and pedestrian trips to, from, and within the UC Davis campus, which would increase the competition for physical space between the modes and increase the potential for collisions. The 2018 LRDP EIR identified several mitigation measures to reduce impacts related to the performance or safety of public transit, bicycle, or pedestrian facilities. Applicable measures, which would be implemented as part of the Bainer Hall and Chemistry Complex project, are:

   - Mitigation Measure 3.16-3a: Monitor transit service performance and support transit improvements.
   - Mitigation Measure 3.16-3b: Monitor transit-related collisions and implement countermeasures to minimize potential conflicts with transit service and facilities.
   - Mitigation Measure 3.16-4: Monitor bicycle-related collisions to implement countermeasures minimizing potential conflicts with bicycle facilities.
   - Mitigation Measure 3.16-5: Monitor pedestrian-related collisions implement countermeasures minimizing potential conflicts with pedestrian facilities.

As shown in Exhibits 3-8 and 3-9 of the 2018 LRDP EIR, onsite and offsite improvements would be made for circulation, connecting to and improving existing central campus pedestrian and bicycle paths. There would be clear separation of bike, pedestrian, and bus traffic to reduce conflicts. The Project's impact is analyzed in the 2018 LRDP EIR Impacts 3.16-3, 3.16-4, and 3.16-5, which addressed impacts related to the performance or safety of public transit, bicycle, or pedestrian facilities. No new or substantially more severe impacts would occur and no additional mitigation would be required.

4.5.18 Utilities and Service Systems

Section 3.17 of the 2018 LRDP EIR addresses the effects of campus growth on utility systems under the 2018 LRDP by providing regulatory setting information, environmental setting information, analysis methodology, significance criteria, and a detailed environmental impact evaluation.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

Utilities & Service Systems Would the Project…	Impact Examined in 2018 LRDP EIR?	Do Proposed Changes Involve New or Substantially More Severe Significant Impacts?*	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Do Mitigation Measures in the 2018 LRDP EIR Address/ Resolve Impacts?
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	Yes	No	No	N/A
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?	Yes	No	No	N/A
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	Yes	No	No	Yes
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	Yes	No	No	N/A
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?	Yes	No	No	N/A
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	Yes	No	No	N/A
g) Comply with federal, state, and local statutes and regulations related to solid waste?	Yes	No	No	N/A
h) Require or result in the construction or expansion of electrical, natural gas, chilled water, or steam facilities, which would cause significant environmental impacts?	Yes	No	No	N/A
i) Require or result in the construction or expansion of telecommunication facilities, which would cause significant environmental impacts?	No	N/A	N/A	N/A

*Determination is related to pre-mitigation conditions, including implementation of previously adopted mitigation.

a) The Project would add 15 new employees, which would result in a negligible increase in domestic water use and associated wastewater production. As the increase in employment is within the growth analyzed in 2018 LRDP Impact 3.17-1 (less than significant), the increase would not be significant. The permitted peak monthly average capacity of the campus wastewater treatment plant (WWTP) is currently 3.85 mgd, which can accommodate the projected growth under the 2018 LRDP, including the Project. Past trends in influent flow rate to the WWTP indicate that the WWTP will continue to have design capacity for many years, including with implementation of the Project. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

   As described in 2018 LRDP EIR Impact 3.10-3 (less than significant) and addressed in Section 4.5.10, "Hydrology and Water Quality," (see checklist item a,f), it is expected that the types of chemical constituents in wastewater would remain approximately the same with implementation of the 2018 LRDP, including the Project. By continuing to adhere to the provisions of NPDES permit CA0077895, the wastewater treatment plant would continue to comply with WDRs. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

b,e) As described above in checklist item a), adequate capacity remains at the campus WWTP to accommodate projected growth under the 2018 LRDP, including the Project. Implementation of the 2018 LRDP includes potential wastewater infrastructure improvement projects to ensure water quality and reliability of campus wastewater collection/treatment infrastructure. Consistent with the analysis in 2018 LRDP EIR Impacts 3.17-2 and 3.17-3 (less than significant), the Bainer Hall and Chemistry Complex would utilize the wastewater infrastructure contemplated in the 2018 LRDP and would not require additional or expanded facilities. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

c) Increased impervious surfaces and the potential need for new stormwater infrastructure to accommodate growth anticipated under the 2018 LRDP was evaluated in 2018 LRDP EIR Impact 3.10-6 (less than significant with mitigation). The analysis acknowledged that changes in impervious surfaces on campus from new development could involve changes to stormwater infrastructure, including drainage patterns, infrastructure connectivity, and the locations of specific features. 2918 LRDP EIR Mitigation Measure 3.10-6 requires implementation of project-level stormwater controls to ensure that impacts would be less than significant. The project site is connected to existing stormwater drainage infrastructure within the project area but would not require any additional outfall areas. The renovation, demolition, and construction of buildings within the project site could result in a small increase in the amount of impervious surfaces, which would be accommodated by the existing stormwater drainage infrastructure. 2018 LRDP EIR Mitigation Measure 3.10-6 requires implementation of Mitigation Measure 3.7-4. As required by 2018 LRDP EIR Mitigation Measure 3.7-4, UC Davis conducted a drainage study for the Project site and has designed the Project to include the necessary onsite stormwater detention facilities with appropriate sizing for anticipated storm events. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be required.

d) Water used within the UC Davis campus is provided by three major sources: WDCWA surface water, SCWA surface water, and groundwater; the Project would utilize any or all these water sources. The increase in water demand attributable to the needs of 15 additional staff members is within the increase considered in 2018 LRDP Impact 3.17-1 (less than significant). Consistent with the LRDP's conservation strategies, the Project would also use low-flow fixtures to reduce domestic water consumption. The 2018 LRDP EIR determined that sufficient water supplies are available to meet projected demand and no new or expanded entitlements are required. The

Project demand is within that contemplated by the 2018 LRDP. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

f) Implementation of the Project, particularly the addition of 15 staff, would result in a negligible increase in solid waste. The waste disposal needs of the Project would be served by the county landfill. The additional staff and associated waste generation were contemplated in 2018 LRDP Impact 3.17-4 (less than significant). The 2018 LRDP EIR determined that Yolo County Central Landfill could accommodate any waste generated by implementation of the 2018 LRDP, which includes the Project. Because of increased diversion rate requirements, landfilled quantities are anticipated to be substantially decreased by 2030-2031 (as described in 3.17.1 "Regulatory Setting" of the 2018 LRDP EIR). Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

g) Materials generated during the demolition phase of the Project would be separated into different categories for reuse, recycling or landfill disposal. Most of the furnishings, fixtures, and equipment from the buildings would be reused in other campus buildings. As the building spaces are demolished, some materials such as copper from pipes and wiring and other metals will be gathered for recycling. Demolition of the buildings would be preceded by abatement of hazardous materials such as lead and asbestos. Low concentrations 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 15 miles to the south of the project site.

   As part of the UC Sustainable Practices Policy, UC Davis has several campus-directed waste reduction strategies/actions in place that would substantially reduce landfill contributions through 2030. Student staff members and interns with the Waste Reduction and Recycling program monitor recycling at campus construction sites by performing site waste assessments and reporting the ultimate diversion rates. Compliance with the UC Sustainable Practices Policy would continue to reduce landfill contributions, consistent with CIWMA, Assembly Bill (AB) 341, Senate Bill (SB) 1374, AB 1826, and SB 1383. The Project would implement these campus waste reduction strategies/actions, as contemplated in 2018 LRDP EIR Impact 3.17-4 (less than significant) and would comply with all applicable statutes and regulations related to solid waste. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

h) The project site is currently served by the existing Central Heating and Cooling Plant and existing lines for electricity and natural gas. Existing infrastructure would continue to serve the project site during operation. The 2018 LRDP EIR identified that campus development under the 2018 LRDP would require extension of electrical utilities as well as expansion of chilled water and steam infrastructure to serve specific projects and determined impacts would be less than significant (2018 LRDP EIR Impacts 3.17-5 and 3.17-6 [less than significant]). Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

i) The Project would connect to the existing campus telecommunications system. No additional capacity would be needed to serve the Project and no off-site construction would be required. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

4.5.19 Conclusion

As described in Chapter 3 of this document, "Project Description," and Chapter 4, "Coverage Under the 2018 LRDP and 2018 LRDP EIR," none of the conditions described in CEQA Guidelines Section 15162 calling for preparation of a subsequent document have occurred. As documented throughout the environmental checklist and discussion, changes to the approved LRDP in connection with the Bainer Hall and Chemistry Complex Addition and Renovation Project and any altered conditions since certification of the LRDP EIR in July 2018 would:

- not result in any new significant environmental effects, and
- not substantially increase the severity of previously identified significant effects.

In addition, no new information of substantial importance has arisen that shows that:

- the Project would have new significant effects,
- the Project would have substantially more severe effects,
- mitigation measures or alternatives previously found to be infeasible would in fact be feasible, or
- mitigation measures or alternatives that are considerably different from those analyzed in the EIR would substantially reduce one or more significant effects on the environment.

Therefore, the differences between the approved LRDP, as described in the certified EIR, and the project modifications now being considered constitute changes consistent with CEQA Guidelines Section 15164. Through this addendum, UC Davis has determined that no subsequent EIR or negative declaration is required for the Bainer Hall and Chemistry Complex Addition and Renovation Project.

5 APPLICABLE 2018 LRDP EIR MITIGATION MEASURES

The following mitigation measures were adopted upon approval of the 2018 LRDP EIR and would be applicable to the mitigation of impacts associated with the proposed Bainer Hall and Chemistry Complex Addition and Renovation Project.

AESTHETICS

Mitigation Measure 3.1-3a: Building surfaces.

UC Davis shall require the use of textured, non-reflective exterior surfaces and non-reflective (mirrored) glass during design review of all new/redeveloped structures.

Mitigation Measure 3.1-3b: Lighting fixtures.

UC Davis shall require all new outdoor lighting to utilize directional lighting methods with shielded and cutoff type light fixtures to minimize glare and upward directed lighting such that light spillover onto adjacent structures does not occur. Verification of inclusion in project design shall be provided at the time of design review.

AIR QUALITY

Mitigation Measure 3.3-1: Reduce construction-generated emissions of ROG, NO_X, and PM_{10}.

Land use development project implemented under the 2018 LRDP shall require its prime construction contractor to implement the following measures:

1) Use construction equipment with engines rated at Tier 3 or better prior to 2025 and Tier 4 or better beginning in 2025.

2) Use no- or low-solids content (i.e., no- or low-VOC) architectural coatings with a maximum VOC content of 50 g/L.

3) Limit passenger vehicles (i.e., non-vendor and non-hauling vehicles) from being driven on extended unpaved portions of project construction sites. UC Davis shall provide off-site paved parking and compliant site-transport arrangements for construction workers, as needed.

4) Water all active construction sites at least twice daily.

5) Plant vegetative ground cover in disturbed areas as soon as possible.

6) Apply soil stabilizers on unpaved roads and inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).

7) Establish a 15 mile-per-hour speed limit for vehicles driving on unpaved portions of project construction sites.

UC Davis shall ensure that the implementation of this mitigation measure is consistent with the UC Davis stormwater program and the California Stormwater Quality Association *Stormwater BMP Handbook for New Development/Redevelopment* and does not result in off-site runoff as a result of watering for dust control purposes.

Mitigation Measure 3.3-2: Reduce emissions of ROG and NO_X.

UC Davis shall implement the following measures to reduce operational emissions to the extent feasible:

1) Implement a program that incentivizes employees and students living off-campus to carpool, use EVs, or use public transit to commute to and from the campus. This program shall provide preferential parking to carpool vehicles, vanpool vehicles, and EVs. At a minimum, the program shall include a virtual or real "ride board" for employees and students to organize carpools and incentives for employees using public transit to commute to and from campus. The program shall include, but is not limited to, the following features.

    a) Limit parking capacity to meet on-site demand. Provide no more on-site parking spaces than necessary to accommodate the number of employees working at a project site and/or the number of residents living at a project site, as determined by the Project size and design.

    b) Non-residential land uses with 20 or more on-site parking spaces shall dedicate preferential parking spaces to vehicles with more than one occupant and Zero Emission Vehicles (including battery electric vehicles and hydrogen fuel cell vehicles). The number of dedicated spaces should be no less than two spaces or 5 percent of the total parking spaces on the project site, whichever is greater. These dedicated spaces shall be in preferential locations such as near the main entrances to the buildings served by the parking lot and/or under the shade of a structure or trees. These spaces shall be clearly marked with signs and pavement markings. This measure shall not be implemented in a way that prevents compliance with requirements in the California Vehicle Code regarding parking spaces for disabled persons or disabled veterans.

2) Work with Unitrans to convert natural gas buses to electric or lower-emission fuels or implement emission control technologies to reduce criteria air pollutant emissions from existing conditions.

3) Implement a program that incentivizes vendors to reduce the emissions associated with vehicles and equipment serving the campus. The goal of the program is to reduce ROG and NO_X emissions from vendors trip by at least 50 percent by 2030 as compared to existing conditions. The program shall implement the following sub-measures to reduce vendor-related, mobile-source emissions.

    a) Incentivize the use of EVs or other clean fuels in their trucks and equipment to reduce ROG and NO_X emissions.

    b) Work with vendors, especially those using trucks, to reduce the number of vendor trips made to the campus through trip chaining, reducing the number of shipments, or other methods.

4) Convert landscaping equipment to electric or alternatively-fueled equipment.

CULTURAL RESOURCES

Mitigation Measure 3.4-1a: Identify and protect unknown archaeological resources.

During project-specific environmental review of development under the 2018 LRDP, the campus shall define each project's area of effect for archaeological resources. 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. The campus shall 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 less than 1,000 sf of disturbance (e.g., a trench for lawn irrigation, tree planting, etc.). Implement Mitigation Measure 3.4-1a(1).
- Moderate: excavation below 18 inches deep and/or over a large area on any site that has not been characterized as sensitive and is not suspected to be a likely location for archaeological resources. Implement Mitigation Measure 3.4-1a(1) and (2).
- Intensive: excavation below 18 inches and/or over a large area on any site that is within the zone of archaeological sensitivity identified in Exhibit 3.4-1, or that is adjacent to a recorded archaeological site. Implement Mitigation Measure 3.4-1a(1), (2), and (3).

UC Davis shall implement the following steps to identify and protect archaeological resources that may be present in the Project's area of effects:

1) For project sites at all levels of investigation, contractor crews shall be required to attend a training session prior to the start of earth moving, regarding how to recognize archaeological sites and artifacts and what steps shall be taken to avoid impacts to those 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 UC Davis Office of Campus Planning and Environmental Stewardship if any are found. In the event of a find, the campus shall implement item (5), below.

2) For project sites requiring a moderate or intensive level of investigation, a surface survey shall be conducted by a qualified archaeologist once the area of ground disturbance has been identified 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 (3), below. Irrespective of findings, the qualified archaeologist shall, in consultation with the UC Davis Office of Campus Planning and Environmental Stewardship, develop an archaeological monitoring plan to be implemented during the construction phase of the Project. If the project site is located within the zone of archaeological sensitivity or it is recommended by the archaeologists, the campus shall notify the appropriate Native American tribe and extend an invitation for monitoring. 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. A written report of the results of the monitoring will be prepared and filed with the appropriate Information Center of the California Historical Resources Information System. In the event of a discovery, the campus shall implement item (5), below.

3) For project sites requiring intensive investigation, irrespective of surface 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 effects. If an archaeological deposit is discovered, the archaeologist will prepare a site record and a written report of the results of investigations and filed with the appropriate Information Center of the California Historical Resources Information System.

   If it is determined that the resource extends into the Project's area of 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's area of effects, this will be noted in the environmental document and no further mitigation is required unless there is a discovery during construction. In the event of a discovery item (5), below shall be implemented.

4) If archaeological material within the Project's area of effects is determined to qualify as an historical resource or a unique archaeological resource (as defined by CEQA), the UC Davis Office of Campus Planning and Environmental Stewardship 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 Mitigation Measure 3.4-1b.

5) If archaeological material is discovered during construction (whether or not an archaeologist is present), all soil disturbing work within 100 feet of the find shall cease. The UC Davis Office of Campus Planning and Environmental Stewardship 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. Mitigation Measure 3.4-1a, steps (3) and (4) shall be implemented.

Mitigation Measure 3.4-4: Conduct project-specific level surveys and identify and implement measures to protect identified historic resources.

During project-specific environmental review of development under the 2018 LRDP, the campus shall define the Project's area of effect for historic buildings and structures. The campus shall determine the potential for the Project to result in historic resource impacts, based on the extent of ground disturbance and site modification anticipated for the proposed project.

Before altering or otherwise affecting a building or structure 50 years old or older, the campus shall retain a qualified architectural historian to record it on a California Department of Parks and Recreation DPR 523 form or equivalent documentation, if the building has not previously been evaluated. 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 buildings or structures that do not meet the CEQA criteria for historical resource, no further mitigation is required.

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 historic building or structure:

1) 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).

2) 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 or Historic American Engineering Record, 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.

3) If preservation and reuse at the site are not feasible, the historical building shall be documented as described in item (2) and, when physically and financially feasible, be moved and preserved or reused.

4) 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 historical building shall be documented as described in item (2).

Mitigation Measure 3.5-4a: Avoidance of Swainson's hawk and other nesting raptors.

For any projects implemented under the 2018 LRDP that would require the removal of mature trees, the following measures will be implemented prior to initiation of construction to avoid, minimize, and fully mitigate impacts to Swainson's hawk, as well as other special-status raptors:

1) Before tree removal occurs, a qualified biologist will determine whether it has been previously recorded or used as a Swainson's hawk or other special-status raptors nest tree. If it is not known to have supported Swainson's hawks or other special-status raptors in the past, the tree will be removed when no active nests are present, generally between September 2 and February 14 if feasible. If the tree to be removed is known to have supported nesting Swainson's hawk or other special-status raptors in the past, UC Davis will implement measures to prevent the potential the net loss of Swainson's hawk or other special-status raptors territories, which may include providing alternative nest trees or protected habitat. UC Davis will consult with CDFW prior to removal of the nest tree and obtain take authorization under Section 2081 of the Fish and Game Code if needed.

2) For construction activities, including tree removal, that begin between February 15 and September 1, qualified biologists will conduct preconstruction surveys for Swainson's hawk and other nesting raptors to identify active nests on and within 0.5 mile of the project site. The surveys will be conducted before the beginning of any construction activities between February 15 and September 1.

3) Impacts to nesting Swainson's hawks and other raptors will be avoided by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. Project activity will not commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or that reducing the buffer would not likely result in nest abandonment. CDFW guidelines recommend implementation of 0.25-mile-wide buffer for Swainson's hawk and 500 feet for other raptors, but the size of the buffer may be adjusted if a qualified biologist and UC Davis, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.

4) Trees will not be removed during the breeding season for nesting raptors unless a survey by a qualified biologist verifies that there is not an active nest in the tree.

Mitigation Measure 3.5-11: Tree surveys and tree removal mitigation.

Before a project is approved, UC Davis will perform a tree survey of the project site. The Office of Campus Planning and the Office of Environmental Stewardship and Design and Construction Management 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 measures will apply:

1) If a project would necessitate removal of a heritage tree, replacement plantings of the same species will be provided by UC Davis at a ratio of 3:1 within two years of removal.

2) If a project would necessitate removal of a Specimen Tree, the Project will relocate the tree if feasible, or will replace the tree with the same species or species of comparable value (relocation or replacement will occur within the project site if feasible).

GEOLOGY, SOILS, AND SEISMICITY

Mitigation Measure 3.7-4: Manage stormwater flows to reduce soil erosion.

Prior to approval of individual projects proposed under the 2018 LRDP, UC Davis shall conduct a drainage study in the vicinity of the site proposed for development to determine if the development could produce additional runoff that may exceed the capacity of campus stormwater infrastructure, cause localized ponding to worsen, or increase the potential for property damage from flooding. Recommendations identified in the drainage study shall be incorporated into project design such that any projected increase in surface water runoff is detained/retained in accordance with applicable requirements and does not exceed current flow rates. Measures may include, but are not limited to, installation of detention/retention basins to capture and manage water, installation of water-retaining landscaping or green-roof features, modifications to existing stormwater capture/conveyance systems, and/or other measures at project-level or campus-wide to capture and manage stormwater.

HAZARDS AND HAZARDOUS MATERIALS

Mitigation Measure 3.9-2a: Site-specific investigation and work plan implementation.

Where initial investigations indicate the potential for contamination, UC Davis shall conduct soil sampling within the boundaries of the plan area prior to initiation of grading or other groundwork. This investigation will follow the American Society for Testing and Materials standards for preparation of a Phase II Environmental Site Assessment and/or other appropriate testing guidelines. If the results indicate that contamination exists at levels above regulatory action standards, then the site will be remediated in accordance with recommendations made by applicable regulatory agencies, including YCEHD, RWQCB, and DTSC. The agencies involved shall depend on the type and extent of contamination.

Based on the results and recommendations of the investigation described above, UC Davis shall prepare a work plan that identifies any necessary remediation activities, including excavation and removal of on-site contaminated soils, and redistribution of clean fill material within the plan area. The plan shall include measures that ensure the safe transport, use, and disposal of contaminated soil removed from the site.

Mitigation Measure 3.9-2b: Hazardous materials contingency plan.

Prior to initiation of grading or other groundwork, UC Davis shall provide a hazardous materials contingency plan to Campus Safety Services and YCEHD, as appropriate. The plan will describe the necessary actions that would be taken if evidence of contaminated soil or groundwater is encountered during construction. The contingency plan shall identify conditions that could indicate potential

hazardous materials contamination, including soil discoloration, petroleum or chemical odors, and presence of underground storage tanks or buried building material.

If at any time during the course of construction, evidence of soil and/or groundwater contamination with hazardous material is encountered, UC Davis shall immediately halt construction and contact Campus Safety Services and YCEHD. Work shall not recommence until the discovery has been assessed/treated appropriately (through such mechanisms as soil or groundwater sampling and remediation if potentially hazardous materials are detected above threshold levels) to the satisfaction of YCEHD, RWQCB, and DTSC (as applicable).

The plan, and obligations to abide by and implement the plan, shall be incorporated into the construction and contract specifications of the Project.

Mitigation Measure 3.9-2c: Minimization of hazards during demolition.

Minimize potential for accidental release of hazardous materials during demolition. Prior to demolition of existing structures, UC Davis shall complete the following:

1) Locate and dispose of potentially hazardous materials in compliance with all applicable federal, state, and local laws. This shall include: 1) identify locations that could contain hazardous residues; 2) remove plumbing fixtures known to contain, or potentially containing, hazardous materials; 3) determine the waste classification of the debris; 4) package contaminated items and wastes; and 5) identify disposal site(s) permitted to accept such wastes.

2) Provide written documentation to the appropriate County (Yolo or Solano) department that asbestos testing and abatement, as appropriate, has occurred in compliance with applicable federal, state, and local laws.

3) Provide written documentation to the appropriate County (Yolo or Solano) department that lead-based paint testing and abatement, as appropriate, has been completed in accordance with applicable state and local laws and regulations. Abatement shall include the removal of lead contaminated soil (considered soil with lead concentrations greater than 400 parts per million in areas where children are likely to be present). If lead-contaminated soil is to be removed, UC Davis shall submit a soil management plan to YCEHD.

Mitigation Measure 3.9-6. Prepare and implement site-specific construction traffic management plans.

UC Davis shall prepare and implement site-specific construction traffic management plans for any construction effort that would require work within existing roadways. To the extent feasible, the campus shall maintain at least one unobstructed lane in both directions on campus roadways during construction activities. At any time only a single lane is available due to construction-related road closures, the campus shall provide a temporary traffic signal, signal carriers (i.e., flag persons), or other appropriate traffic controls to allow travel in both directions. If construction activities require the complete closure of a roadway, the campus shall provide appropriate signage indicating alternative routes. To ensure adequate access for emergency vehicles when construction projects would result in temporary lane or roadway closures, the campus shall inform emergency services, including the UC Davis Police Department, UC Davis Fire Department, and American Medical Response, of the closures and alternative travel routes.

HYDROLOGY AND WATER QUALITY

Mitigation Measure 3.10-6: Implement project-level stormwater controls.

Implement Mitigation Measure 3.7-4.

NOISE

Mitigation Measure 3.12-1: Reduce construction noise.

For all construction activities, UC Davis shall implement or incorporate the following noise reduction measures into construction specifications for contractor(s) implementation during project construction:

1) Construction activity shall be limited to the daytime hours between 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 8:00 p.m. on weekends and holidays, where possible.

2) All construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses, and/or located to the extent feasible such that existing or constructed noise attenuating features (e.g., temporary noise wall or blankets) block line-of-site between affected noise-sensitive land uses and construction staging areas.

3) All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturer recommendations. Equipment engine shrouds shall be closed during equipment operation.

4) Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site) where feasible and consistent with building codes and other applicable laws and regulations.

5) Stationary noise sources such as generators or pumps shall be located 100 feet away or more from noise-sensitive land uses, as feasible.

6) Loud construction activity (i.e., construction activity such as jackhammering, concrete sawing, asphalt removal, and large-scale grading operations) shall not be scheduled during finals week and preferably during holidays, summer/winter break, Thanksgiving break, and spring break.

7) No less than one week prior to the start of construction activities at a particular location, notification shall be provided to academic, administrative, and residential uses located within 100 feet of the construction site.

8) When construction would occur within 100 feet of sensitive receptors and may result in temporary noise levels in excess of 86 dBA L_{max} at the exterior of the adjacent receptor, temporary noise barriers (e.g., noise-insulating blankets or temporary plywood structures) shall be erected that reduce construction-related noise levels to less than 86 dBA L_{max} at the receptor.

9) For any construction activity that must extend beyond the daytime hours of 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 8:00 p.m. on weekends and occur within 1,120 feet of a building where people sleep, UC Davis shall ensure that interior noise levels of 45 dBA L_{max} are not exceeded at any receiving land use by not exceeding 70 dBA L_{max} at the receiving land use property line. Typical residential structures with windows closed achieve a 25-30 dBA exterior-to-interior noise reduction (Caltrans 2002). Thus, using the lower end of this range, an exterior noise

level of 70 dBA L_{max} would ensure interior noise levels do not result in an increased risk for sleep disturbance. To achieve this performance standard, the following measures shall be implemented:

a) Use of noise-reducing enclosures and techniques around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors).

b) Installation of temporary noise curtains installed as close as possible to the boundary of the construction site within the direct line of sight path of the nearby sensitive receptor(s) and consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least one pound per square foot.

c) Retain a qualified noise specialist to conduct noise monitoring to ensure that noise reduction measures are achieved the necessary reductions such that levels at the receiving land uses do not exceed exterior noise levels of 70 dBA L_{max}. Exceedances of noise standards shall result in immediate halt of construction until additional noise-reduction measures are implemented.

Mitigation Measure 3.12-2: Reduce noise exposure from new stationary noise sources.

During project design of individual projects proposed under the 2018 LRDP, UC Davis shall review and ensure that external mechanical equipment, including HVAC units associated with new/renovated buildings, incorporates features designed to reduce noise to below 63 dB L_{eq} at any nearby building where people sleep. Design features may include, but are not limited to, locating equipment within equipment rooms or enclosures that incorporate noise reduction features, such as acoustical louvers, and exhaust and intake silencers. Equipment enclosures shall be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors.

TRANSPORTATION, CIRCULATION, AND PARKING

Mitigation Measure 3.16-1: Implement TDM strategies to reduce peak hour vehicle trips on I-80.

UC Davis shall use the 2016-2017 academic year as the baseline by which to determine 2018 LRDP-related growth in peak hour student and employee commute vehicle trips on I-80. During the 2018-2019 academic year and every two years thereafter, UC Davis shall determine the number of peak hour student and employee commute vehicle trips that utilize I-80. In instances where this figure exceeds baseline levels, UC Davis shall institute TDM strategies to reduce campus-related peak hour vehicle trips on I-80. This figure could be estimated from the results of the annual Campus Travel Survey administered by the UC Davis Institute of Transportation Studies. The implementation of TDM strategies shall reduce peak hour student and employee commute vehicle trips on I-80 equal to or below baseline levels.

TDM strategies that would reduce peak hour vehicle trips on I-80 include strategies to reduce commute and business vehicle trips to and from campus using I-80. Specific potential TDM strategies include, but are not limited to, the following:

- expand public transit service, including additional regional service for UC Davis students and employees living off-campus and outside of Davis,
- support alternative congestion management policies/projects on I-80, including a toll for all vehicles utilizing I-80 across the Yolo Causeway,

- implement a fair value commuting program, where fees charged to SOV commuters (e.g., through parking pricing) are tied to UC Davis vehicle trip reduction targets and fee revenue is rebated to non-SOV commuters, or other pricing of vehicle travel and parking,
- provide carpool and/or vanpool incentive programs,
- allow flexible work hours and schedule classes to reduce arrivals/departures during peak hours, and
- offer remote working options.

The TDM strategies implemented to reduce peak hour vehicle trips on I-80 will be consistent with existing and planned TDM programs on campus, including the UC Davis TDM Plan currently in development. If these TDM strategies are not sufficient to reduce peak hour trips to baseline levels, additional TDM measures or adjustments to the measures above shall be implemented, as needed to reduce peak hour trips to baseline levels.

Mitigation Measure 3.16-2a: Implement TDM strategies to reduce peak hour vehicle delay at the Hutchison Drive/SR 113 NB Ramps intersection.

During the 2018-2019 academic year and every two years thereafter, UC Davis shall monitor and analyze traffic conditions at the Hutchison Drive/SR 113 NB Ramps intersection. Additionally, during its standard environmental review process, UC Davis shall forecast and analyze traffic conditions at the Hutchison Drive/SR 113 NB Ramps intersection for individual development projects proposed under the 2018 LRDP that are expected to affect operations at the intersection. When operations at the Hutchison Drive/SR 113 NB Ramps intersection are found to reach an intersection level of service F and the 2018 LRDP represents 10 percent of the total volume or overall intersection delay, or when a project-level analysis indicates the same, UC Davis shall institute TDM strategies to reduce peak hour vehicle trips and, in turn, vehicle delay at the Hutchison Drive/SR 113 NB Ramps intersection.

The implementation of TDM strategies shall reduce peak hour average intersection delay caused by the 2018 LRDP to acceptable levels in accordance with the intersection level of service significance criteria, including the level of service thresholds established by Caltrans or the Yolo County CMP. Since the 2018 LRDP would cause intersection operations at Hutchison Drive/SR 113 NB Ramps to degrade from an acceptable LOS to an unacceptable LOS, TDM strategies would be required to reduce peak hour intersection delay to an acceptable LOS. According to the Yolo County CMP, LOS E or better, or 50 seconds or less, is acceptable for the Hutchison Drive/SR 113 NB Ramps stop-controlled intersection.

The growth at West Village accounts for most of the increase (approximately 280 trips) in the stop-controlled northbound left-turn volume during the p.m. peak hour between 2030 no project and 2030 plus 2018 LRDP conditions. This movement is largely responsible for the high intersection delays. These trips tend to be longer distance commute trips using SR 113 and I-80. As such, TDM strategies that would reduce peak hour intersection delay at this location include strategies to reduce commute and business vehicle trips utilizing the Hutchison Drive/SR 113 interchange as well as strategies to reduce peak hour vehicle trip use of Hutchison Drive between the central campus and west campus. Specific potential TDM strategies include, but are not limited to, the following:

- expand public transit service, including additional service connecting West Village and the central campus,
- shift UC Davis service vehicles to use the Garrod Drive overcrossing of SR 113,
- promote bicycle use between West Village and the central campus,
- implement a fair value commuting program or other pricing of vehicle travel and parking,

- provide carpool and/or vanpool incentive programs,
- allow flexible work hours and schedule classes to reduce arrivals/departures during peak hours, and
- offer remote working options.

The TDM strategies implemented to reduce peak hour intersection delay at this location will be consistent with existing and planned TDM programs on campus, including the UC Davis TDM Plan currently in development. If these TDM strategies are not sufficient to reduce peak hour intersection delay consistent with the significance criteria, additional TDM measures or adjustments to the measures above shall be implemented, as needed to reduce peak hour intersection delay consistent with the significance criteria.

Mitigation Measure 3.16-2b: Modify SR 113/Hutchison Drive interchange.

During the 2018-2019 academic year and every two years thereafter, UC Davis shall monitor and analyze traffic conditions at the SR 113/Hutchison Drive interchange. Additionally, during its standard environmental review process, UC Davis shall forecast and analyze traffic conditions at the SR 113/Hutchison Drive interchange for individual development projects proposed under the 2018 LRDP that are expected to affect operations at the interchange. When operations at the SR 113/Hutchison Drive ramp terminal intersections are found to reach an intersection level of service F and the 2018 LRDP represents 10 percent of the total volume or overall intersection delay criteria, or when a project-level analysis indicates the same, the SR 113/Hutchison Drive interchange shall be modified to increase the capacity of the ramp terminal intersections and to modify uncontrolled turning movements that conflict with bicycle and pedestrian movements as specified in WVE Mitigation Measure 3.16-4a. Potential modifications include ramp widening and alignment changes plus the addition of ramp approach turn lanes, traffic signals, or roundabouts. Both ramp terminal intersections meet peak hour signal warrants with the Project. Implementation of signals alone would be sufficient to provide acceptable peak hour traffic operations. Since the interchange is owned and operated by Caltrans, any improvements will be subject to Caltrans review, project development procedures, and approval.

Mitigation Measure 3.16-2c: Implement TDM strategies to reduce peak hour vehicle delay at the First Street/D Street and Russell Boulevard/Fifth Street/B Street intersections.

The First Street/D Street and Russell Boulevard/Fifth Street/B Street intersections and the adjacent intersections are part of the downtown grid street system. This network is limited in terms of physical modification or expansion due to right-of-way constraints. As such, reducing vehicle delays for these intersections will require UC Davis to implement its TDM program to reduce vehicle travel to and from campus.

During the 2018-2019 academic year and every 2 years thereafter, UC Davis shall monitor and analyze traffic conditions at the First Street/D Street and Russell Boulevard/Fifth Street/B Street intersections. Additionally, during its standard environmental review process, UC Davis shall forecast and analyze traffic conditions at the First Street/D Street and Russell Boulevard/Fifth Street/B Street intersections for individual development projects proposed under the 2018 LRDP that are expected to affect operations at the intersection. When operations at the First Street/D Street and Russell Boulevard/Fifth Street/B Street intersections are found to reach an intersection level of service F and the 2018 LRDP represents 10 percent of the total volume or overall intersection delay, or when a project-level analysis indicates the same, UC Davis shall institute TDM strategies to reduce peak hour vehicle trips and, in turn, vehicle delay at the First Street/D Street and Russell Boulevard/Fifth Street intersections.

The implementation of TDM strategies shall reduce peak hour average intersection delay caused by the 2018 LRDP to acceptable levels in accordance with the intersection level of service significance

criteria, including the level of service thresholds established by the City of Davis. Since the 2018 LRDP would cause intersection operations at First Street/D Street and Russell Boulevard/Fifth Street/B Street to degrade from an acceptable LOS to an unacceptable LOS, TDM strategies would be required to reduce peak hour intersection delay to an acceptable LOS. According to the City of Davis General Plan, LOS E or better, or 80 seconds or less, is acceptable for the First Street/D Street and Russell Boulevard/Fifth Street signalized intersections.

TDM strategies that would reduce peak hour intersection delay at these locations include strategies to reduce vehicle travel to and from campus. Specific potential TDM strategies include, but are not limited to, the following:

- promote walking and bicycling for student and employee trips between UC Davis, City of Davis residential neighborhoods, and Downtown Davis,
- shift the timing of service vehicles and/or deliveries from peak periods,
- expand public transit service, including additional service connecting UC Davis and City of Davis residential neighborhoods,
- implement a fair value commuting program or other pricing of vehicle travel and parking,
- provide carpool and/or vanpool incentive programs,
- allow flexible work hours and schedule classes to reduce arrivals/departures during peak hours, and
- offer remote working options.

The TDM strategies implemented to reduce peak hour intersection delay at this location will be consistent with existing and planned TDM programs on campus, including the UC Davis TDM Plan currently in development. If these TDM strategies are not sufficient to reduce peak hour intersection delay consistent with the significance criteria, additional TDM measures or adjustments to the measures above shall be implemented, as needed to reduce peak hour intersection delay consistent with the significance criteria.

Mitigation Measure 3.16-2d: Implement TDM strategies to reduce peak hour vehicle delay at study intersections on the Old Davis Road corridor.

During the 2018-2019 academic year and every two years thereafter, UC Davis shall monitor and analyze traffic conditions at the Old Davis Road corridor study intersections between and inclusive of the Old Davis Road/I-80 EB Ramps and First Street/A Street intersections. Additionally, during its standard environmental review process, UC Davis shall forecast and analyze traffic conditions at the Old Davis Road corridor study intersections between and inclusive of the Old Davis Road/I-80 EB Ramps and First Street/A Street intersections for individual development projects proposed under the 2018 LRDP that are expected to affect operations at the intersections. When operations at the Old Davis Road corridor study intersections between and inclusive of the Old Davis Road/I-80 EB Ramps and First Street/A Street intersections are found to reach an intersection level of service F and the 2018 LRDP represents 10 percent of the total volume or overall intersection delay, or when a project-level analysis indicates the same, UC Davis shall institute TDM strategies to reduce peak hour vehicle trips and, in turn, vehicle delay at study intersections located on the segment of Old Davis Road between I-80 and First Street.

The implementation of TDM strategies shall reduce peak hour average intersection delay caused by the 2018 LRDP to acceptable levels in accordance with the intersection level of service significance criteria, including the level of service thresholds established by UC Davis, the City of Davis, and Caltrans. Every study intersection along this segment of Old Davis Road would operate at LOS F

conditions during the p.m. peak hour both with and without the 2018 LRDP. Moreover, the 2018 LRDP would increase delay in excess of 10 percent at each study intersection along the Old Davis Road corridor. Therefore, for each Old Davis Road corridor study intersection between and inclusive of the Old Davis Road/I-80 EB Ramps and First Street/A Street intersections, UC Davis shall implement TDM strategies to reduce the 2018 LRDP's contribution to LOS F conditions until the incremental increase in peak hour intersection volume or delay caused by the 2018 LRDP does not exceed 10 percent compared to 2030 no project conditions.

TDM strategies that would reduce peak hour intersection delay at these locations include strategies to reduce commute and business vehicle trips utilizing the Old Davis Road corridor. Specific potential TDM strategies include, but are not limited to, the following:

- promote walking and bicycling for student and employee trips during peak periods,
- shift the timing of service vehicles and/or deliveries from peak periods,
- expand public transit service, including additional regional service for UC Davis students and employees living off-campus and outside of Davis as well as local service for on-campus residents traveling to nearby destinations on-campus and in Davis,
- manage parking lot access along Old Davis Road,
- limit parking supply and/or unbundle parking costs for future student housing located along the Old Davis Road corridor,
- implement a fair value commuting program or other pricing of vehicle travel and parking,
- provide carpool and/or vanpool incentive programs,
- allow flexible work hours and schedule classes to reduce arrivals/departures during peak hours, and
- offer remote working options.

The TDM strategies implemented to reduce peak hour intersection delay at this location will be consistent with existing and planned TDM programs on campus, including the UC Davis TDM Plan currently in development. If these TDM strategies are not sufficient to reduce peak hour intersection delay consistent with the significance criteria, additional TDM measures or adjustments to the measures above shall be implemented, as needed to reduce peak hour intersection delay consistent with the significance criteria.

Mitigation Measure 3.16-2e: Upgrade Old Davis Road between I-80 and First Street to an arterial.

Implement 2018 LRDP Mitigation Measure 3.16-7, which will monitor traffic volumes and upgrade the segment of Old Davis Road between I-80 and First Street to arterial status under both 2030 and 2036 plus project conditions. Unacceptable roadway operations can be attributed to substantial growth in on- and off-campus student housing within the immediate vicinity of the affected roadway segment, as well as the incompatibility between the existing roadway segment design and anticipated peak hour vehicle, bicycle, and pedestrian traffic demand. These factors would be present under both 2030 and 2036 plus 2018 LRDP conditions.

Mitigation Measure 3.16-3a: Monitor transit service performance and support transit improvements.

Currently, Unitrans regularly monitors transit service performance and adjusts service levels, as feasible, according to established service standards. Unitrans shall continue to implement this monitoring and service change process annually over the duration of the 2018 LRDP implementation.

UC Davis shall work with Unitrans staff to identify and support the implementation of transit service and/or facility improvements necessary to adhere to established service standards and, in turn, maintain a high quality customer experience so as not to deter existing and potential ridership. Potential transit improvements include modifying existing transit routes or adding new routes to serve areas of the campus underserved by transit, adding service capacity (through increased headways and/or larger vehicles) to prevent chronic overcrowding, improving terminal facilities to accommodate additional passengers and transit vehicles, and improving coordination between transit providers.

Transit improvements shall result in service performance that meets the capacity standard established in the most up-to-date City of Davis Short Range Transit Plan. Currently, this standard requires Unitrans to maintain acceptable loading conditions (fewer than 150 percent of seated capacity) on more than 95 percent of all bus trips and for more than 90 percent of bus passengers.

Transit facility and roadway improvements shall be designed and constructed in accordance with industry best practices and applicable UC Davis, City of Davis, and State of California standards. Improvements shall be implemented or constructed in a manner that would not physically disrupt existing transit service or facilities (e.g., additional bus service that exceeds available bus stop or transit terminal capacity) or otherwise adversely affect transit operations.

Mitigation Measure 3.16-3b: Monitor transit-related collisions and implement countermeasures to minimize potential conflicts with transit service and facilities.

During the 2018-2019 academic year and every two years thereafter, UC Davis shall record on-campus collisions involving a transit vehicle and establish a transit vehicle collision rate. The rate should be sensitive to transit provider, location context (e.g., campus core area versus West Village) and facility type (e.g., intersection versus segment). UC Davis shall determine the on-campus transit vehicle collision rate as part of its biennial mitigation monitoring program established in the LRDP EIR. In instances where the rate increases from the prior observation period, UC Davis shall develop and implement countermeasures that address collision hot-spots and common primary collision factors. UC Davis shall also identify and develop countermeasures for locations where the change in the mix of travel patterns and behavior is determined to be incompatible with the facility as designed. Potential countermeasures include physically separating modes in shared operating environments, particularly high- versus low-speed travel modes, and increased education and enforcement.

At a minimum, UC Davis shall include the following locations in the mitigation monitoring program:

- Silo Terminal,
- Memorial Union Terminal,
- La Rue Road,
- Hutchison Drive,
- Howard Way,
- Sage Street, and
- Russell Boulevard.

Transit facility and roadway improvements that intend to minimize conflicts between transit vehicles and other travel modes shall be designed and constructed in accordance with industry best practices and applicable UC Davis, City of Davis (for facilities within the City of Davis), and State of California standards. Improvements shall be implemented or constructed in a manner that would not physically disrupt existing transit service or facilities or otherwise adversely affect transit operations.

Mitigation Measure 3.16-4: Monitor bicycle-related collisions to implement countermeasures minimizing potential conflicts with bicycle facilities.

During the 2018-2019 academic year and every two years thereafter, UC Davis shall record on-campus bicycle volumes and collisions involving bicyclists and establish a bicycle collision rate. The rate should be sensitive to context (e.g., campus core area versus West Village) and facility type (e.g., intersection versus segment). UC Davis shall determine the on-campus bicycle collision rate as part of its biennial mitigation monitoring program established in the LRDP EIR. In instances where the rate increases from the prior observation period, UC Davis shall develop and implement countermeasures designed to reduce the rate and primary collision factors. UC Davis shall also identify and develop countermeasures for locations where the change in the mix of travel patterns and behavior is determined to be incompatible with the facility as designed. Potential countermeasures include the following:

- construct physically separated facilities for each mode in shared operating environments (particularly high- versus low-speed travel modes),
- restrict select modes in certain areas where one mode is prioritized over another to minimize collision potential,
- widen existing facilities,
- construct new facilities,
- increase the number of bicycle parking facilities and distribute them to minimize crowding on connecting bicycle facilities,
- consider TDM measures that would alter demand to minimize collision potential,
- enforcement of 'rules of the road' per the California Vehicle Code and applicable University policies,
- education of existing and prospective bicyclists to give people the skills and abilities to ride,
- control class schedules and passing periods to minimize effects of peak bicycle traffic, and
- expand core area restrictions on service vehicles.

Anticipated increases in bicycle activity would be concentrated near focal points for students and staff activities, including new on-campus housing developments, existing and new academic and recreational facilities (e.g., classrooms, lecture halls, athletic fields) in the core campus area, off-campus activity centers (e.g., Downtown Davis, University Mall) and along bicycle facilities connecting activity generators. Therefore, at a minimum, UC Davis shall include the following locations in the mitigation monitoring program:

- core campus area;
- La Rue Road between Russell Boulevard and Old Davis Road;
- SR 113 bike/pedestrian overcrossing, Orchard Park Circle, and Orchard Road;
- Sprocket Bikeway;
- California Avenue between Russell Boulevard and Old Davis Road;

- Hutchison Drive between Sage Street and Old Davis Road;
- Old Davis Road between I-80 and First Street;
- Howard Way between Russell Boulevard and North Quad;
- Third Street between A Street and Downtown Davis;
- First Street between A Street and Downtown Davis;
- Russell Boulevard corridor between SR 113 and Downtown Davis (including intersections with north-south roadways, especially those involving campus connections); and
- West Village.

Bicycle facility and roadway improvements that intend to minimize conflicts between bicyclists and other travel modes shall be designed and constructed in accordance with applicable UC Davis, City of Davis, and State of California standards.

Mitigation Measure 3.16-5: Monitor pedestrian-related collisions implement countermeasures minimizing potential conflicts with pedestrian facilities.

During the 2018-2019 academic year and each two years thereafter, UC Davis shall record on-campus pedestrian volumes and collisions involving pedestrians and establish a pedestrian collision rate. The rate should be sensitive to context (e.g., campus core area versus West Village) and facility type (e.g., intersection versus segment). UC Davis shall determine the on-campus pedestrian collision rate as part of its biennial mitigation monitoring program established in the LRDP EIR. In instances where the rate increases from the prior observation period, UC Davis shall develop and implement countermeasures to reduce the rate and address primary collision factors. UC Davis shall also identify and develop countermeasures for locations where the change in the mix of travel patterns and behavior is determined to be incompatible with the facility as designed. Potential countermeasures include the following:

- construct physically separated facilities for each mode in shared operating environments (particularly high- versus low-speed travel modes),
- restrict select modes in certain areas where one mode is prioritized over another to minimize collision potential,
- widen existing facilities,
- construct new facilities, and
- consider TDM measures that would alter demand to minimize collision potential.

Anticipated increases in pedestrian activity would be concentrated near focal points for students and staff activities, including new on-campus housing developments, existing and new academic and recreational facilities (e.g., classrooms, lecture halls, athletic fields) in the core campus area, off-campus activity centers (e.g., Downtown Davis, University Mall) and along pedestrian facilities connecting activity generators. Therefore, at a minimum, UC Davis shall include the following locations in the mitigation monitoring program:

- core campus area;
- La Rue Road between Russell Boulevard and Old Davis Road;
- SR 113 bike/pedestrian overcrossing, Orchard Park Circle, and Orchard Road;
- Sprocket Bikeway;

- Hutchison Drive between Sage Street and Old Davis Road;
- Old Davis Road between I-80 and First Street;
- Howard Way between Russell Boulevard and North Quad;
- Third Street between A Street and Downtown Davis;
- First Street between A Street and Downtown Davis;
- Russell Boulevard corridor between SR 113 and Downtown Davis (including intersections with north-south roadways, especially those involving campus connections); and
- West Village.

Pedestrian facility and roadway improvements that intend to minimize conflicts between pedestrians and other travel modes shall be designed and constructed in accordance with applicable UC Davis, City of Davis, and State of California standards.

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