



HUTCHISON QUAD HOT WATER CONVERSION

Addendum to the UC Davis 2018 Long Range Development Plan EIR

State Clearinghouse No. 2017012008

Prepared By:

**CAMPUS PLANNING AND ENVIRONMENTAL STEWARDSHIP
University of California
One Shields Avenue
436 Mrak Hall
Davis, California 95616**

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Contact: Matt Dulcich, Director of Environmental Planning
530-752-9597

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LIST OF ABBREVIATIONS

2018 LRDP	University of California Davis 2018 Long Range Development Plan
AB	Assembly Bill
BMP	best management practices
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CO	carbon monoxide
dB	decibel
dBA	A-weighted decibel
diesel PM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
EIR	Environmental Impact Report
HCP	Habitat Conservation Plan
I-80	Interstate Highway 80
LOS	level of service
L_{max}	maximum noise level (the maximum instantaneous noise level during a specific period)
MND	mitigated negative declaration
MS4	Municipal Separate Storm Sewer System
MTP/SCS	Metropolitan Transportation Plan/Sustainable Communities Strategy
NAHC	Native American Heritage Center
NCCP	Natural Community Conservation Plan
NOA	naturally occurring asbestos
NO_x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
Phase II Small MS4 Permit	General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems
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
Project	Hutchison Quad Hot Water Conversion Project
ROG	reactive organic gases
RWQCB	regional water quality control board
SACOG	Sacramento Area Council of Government
SB	Senate Bill
SR	State Route
SWPPP	stormwater pollution prevention plan
TAC	toxic air contaminant
the Program EIR	2018 LRDP EIR
UC	University of California
UFP	ultrafine particles
VMT	vehicle miles traveled
YCEHD	Yolo County Environmental Health Division
YSAQMD	Yolo-Solano Air Quality Management District

1 PROJECT INFORMATION

Project title:	Hutchison Quad Hot Water Conversion 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:	<p>This addendum documents that none of the conditions described in Section 15162 of the State CEQA Guidelines have occurred and the Project will not have any significant effects that were not already discussed in 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:</p> <ul style="list-style-type: none">▲ 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: https://environmentalplanning.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 Hutchison Quad Hot Water Conversion Project (Project). This Project is consistent with the designated land use and the conversion from steam heating to heating hot water contemplated in the 2018 LRDP, but was not specifically described in the 2018 LRDP EIR. This addendum describes the Project, which would replace the old and inefficient campus steam distribution system with a new energy-efficient hot water system, and evaluates how this modification to the 2018 LRDP is covered by the 2018 LRDP EIR. No subsequent CEQA document is necessary for this 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 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 (PRC) 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 Hutchison Quad Hot Water Conversion Project is consistent with the *Campus Utilities* land use designation and UC Davis' consideration of planning efforts to convert from steam heating to heating hot water, as described in Impact 3.17-5 of Volume 1 of the 2018 LRDP EIR. However, the campus had not formally committed to undertaking the steam to heating hot water conversion in the 2018 LRDP and LRDP EIR; therefore, it would represent a minor modification to the LRDP involving trenching, installation of new underground piping, minor demolition, installation of two new distribution heat exchangers, limited tree removal, and the replacement of existing in-building steam-hot water heat exchangers with hot water-hot water heat exchangers. This addendum utilizes a modified checklist format to document that the infrastructure improvements 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 addendum 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 Hutchison Quad Hot Water Conversion Project to document that the Project is within the activities evaluated in the program EIR and that no subsequent EIR is required.

2.1.2 State 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.

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 chapters:

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

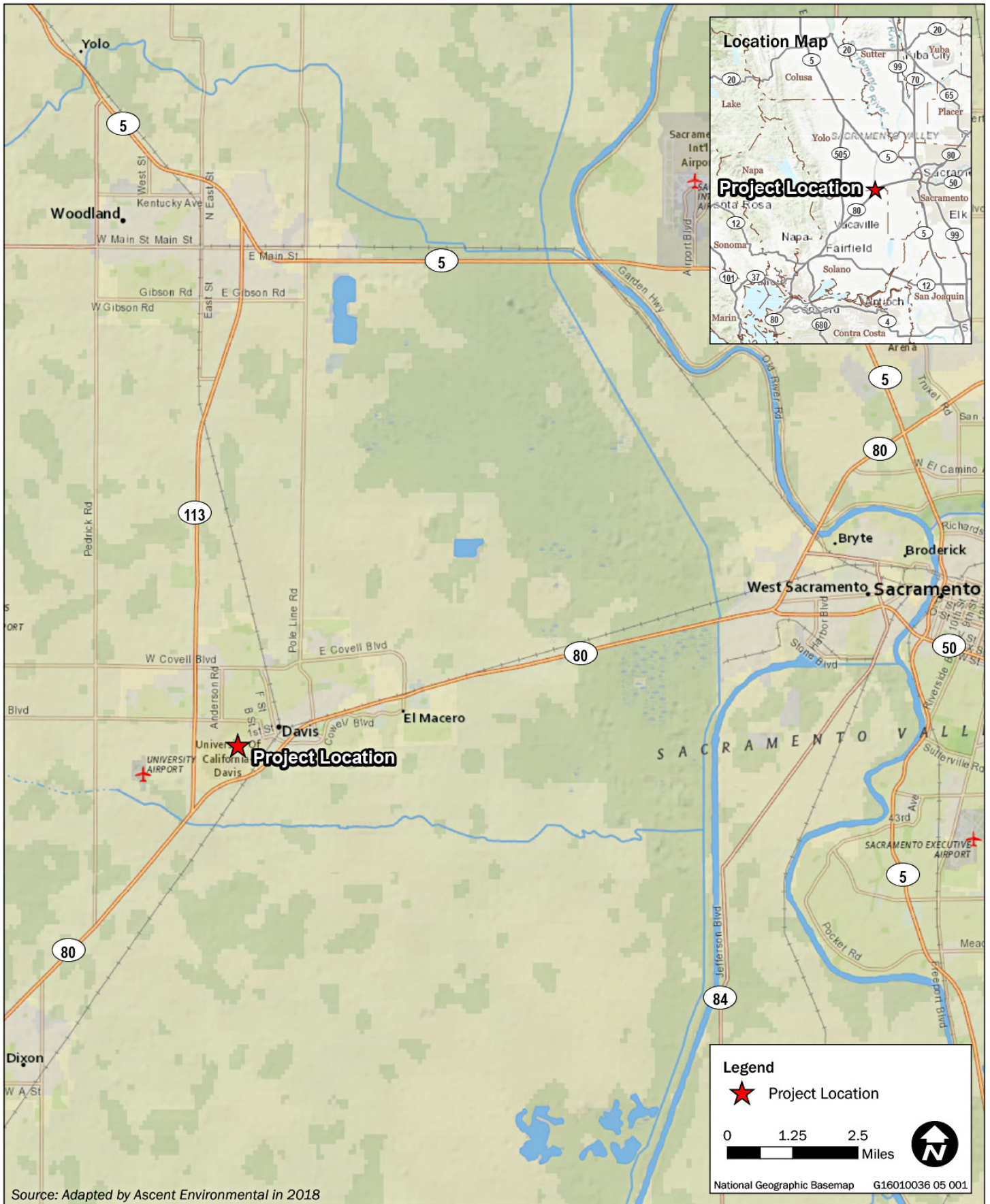
The approximately 5,300-acre UC Davis campus is located in Yolo and Solano Counties, approximately 72 miles northeast of San Francisco, 15 miles west of the City of Sacramento, and adjacent to the City of Davis (see Figure 3-1). The campus is composed of four geographical areas: the central campus, the south campus, the west campus, and Russell Ranch (see Figure 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

The Hutchison Quad Hot Water Conversion Project is located on the central campus between the Central Plant and the North Quad area and consists of three major components: (1) two new distribution heat exchangers, (2) underground hot water supply and return piping, and (3) conversion of mechanical equipment in 40 major buildings from steam to hot water heating (Figure 3-3). The new distribution heat exchangers would be installed at the Central Plant and next to the Enology Building, as shown in Figures 3-4 and 3-5. Approximately 4 miles of underground piping would be installed, consisting of approximately 3 miles of main lines and approximately 1 mile of lateral lines, located along Tercero Hall Circle, Bioletti Way, Hutchison Drive, California Avenue, Peter J Shields Avenue, North Quad Avenue, and East Quad Avenue (Figure 3-3). Existing hot water/steam equipment in 40 central campus buildings (Figure 3-3) would be replaced with new hot-water-hot water heat exchangers, electric hot water heaters, electric industrial hot water heaters, or electric steam generators.

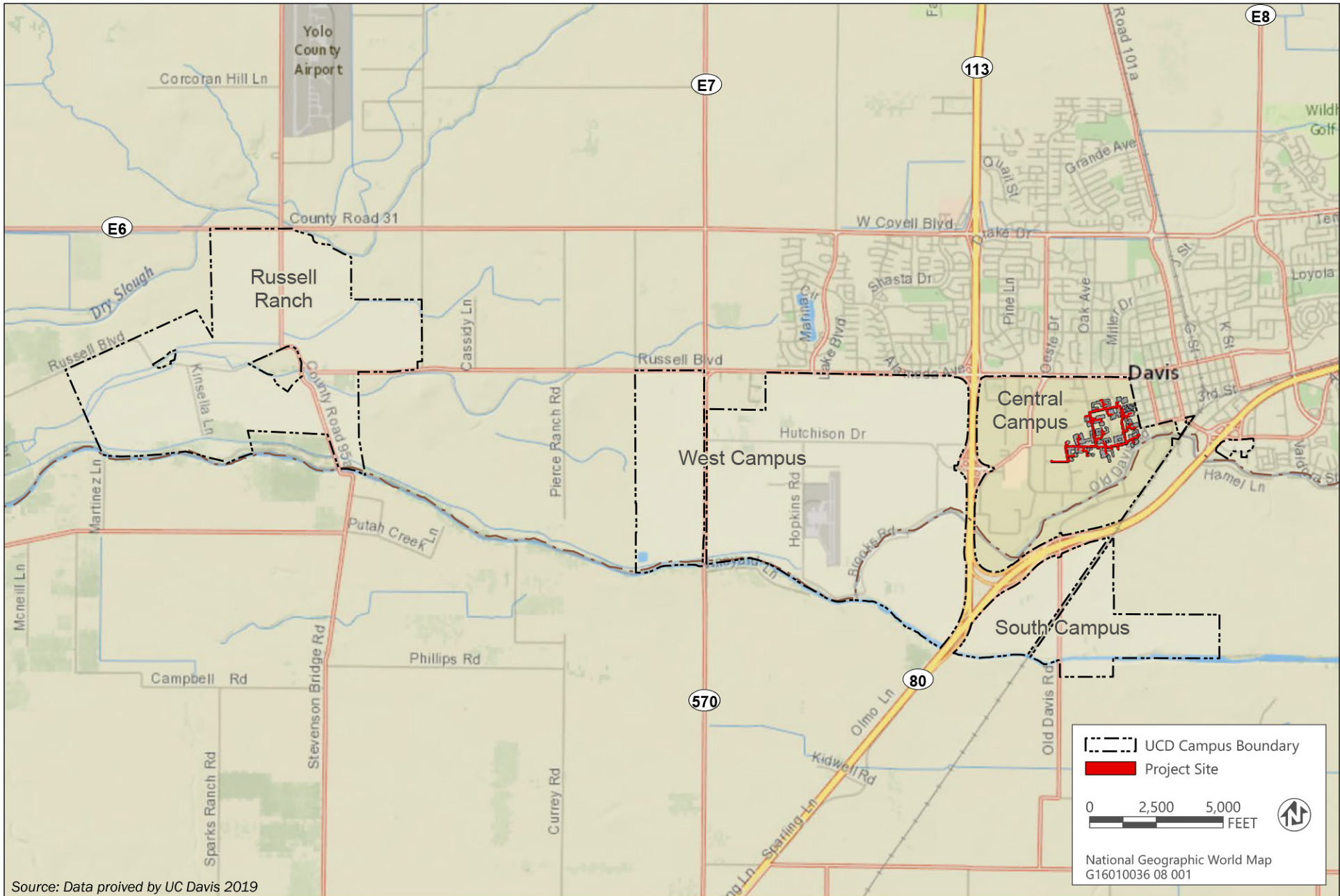
3.3 PROPOSED PROJECT

The Project involves replacing the old and inefficient campus steam distribution system with a new energy-efficient hot water system for heating. Two new distribution heat exchangers would be installed: one located within the fenced Central Plant, east of the old cogeneration building (Figure 3-4) and the other next to the Enology Building (Figure 3-5) in the parking lot on the southwest side of the building. Some interior work would be required at the Central Plant to connect to existing hot water facilities inside the building. The heat exchanger next to the Enology Building would be enclosed by a slatted chain-link fence. If necessary, 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 would also be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors. Abandoned equipment and facilities that conflict with the new equipment installation would be removed and disposed of off-site.



Source: Adapted by Ascent Environmental in 2018

Figure 3-1 Regional Location

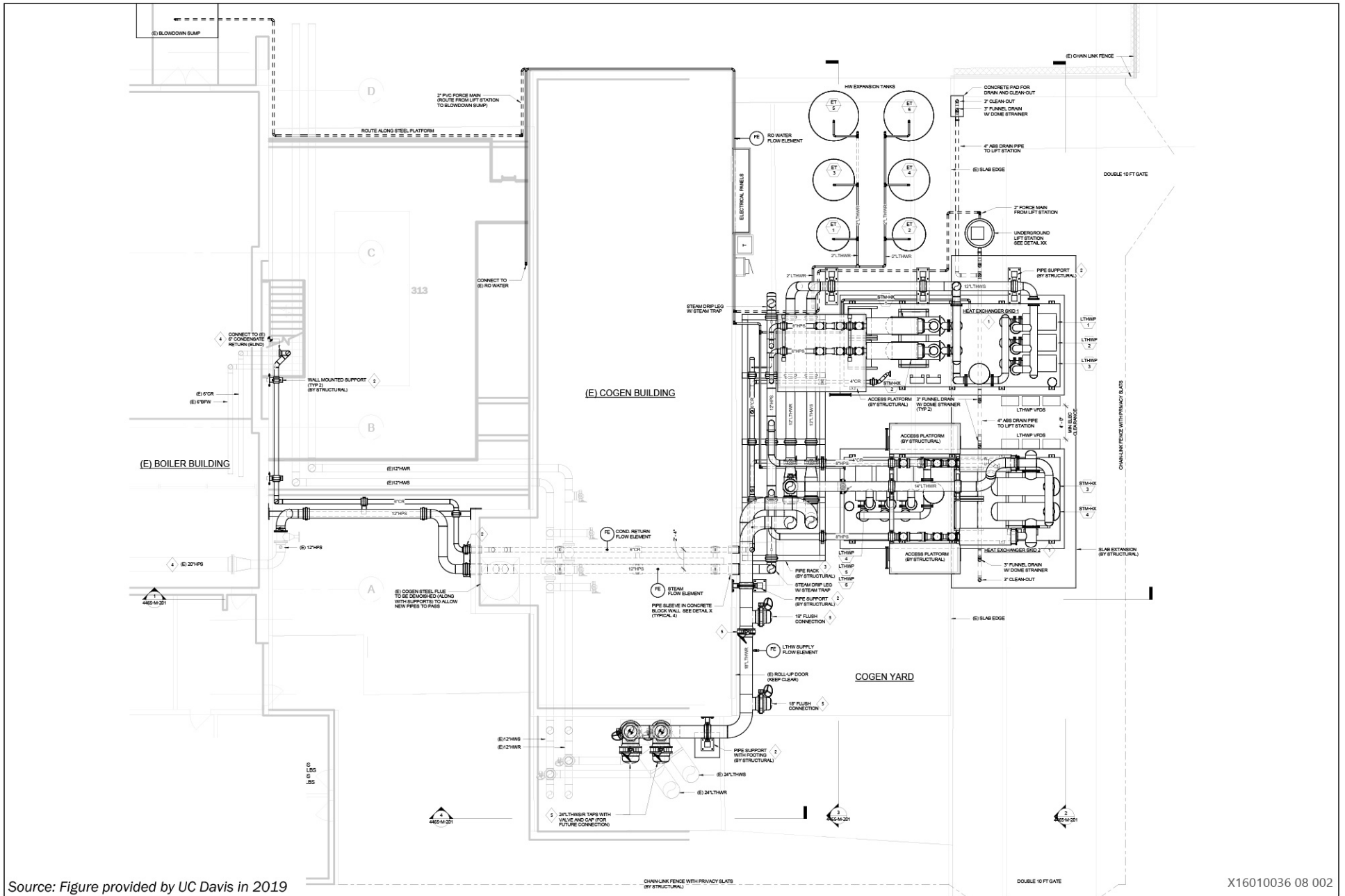


Source: Data provided by UC Davis 2019

Figure 3-2 Project Location

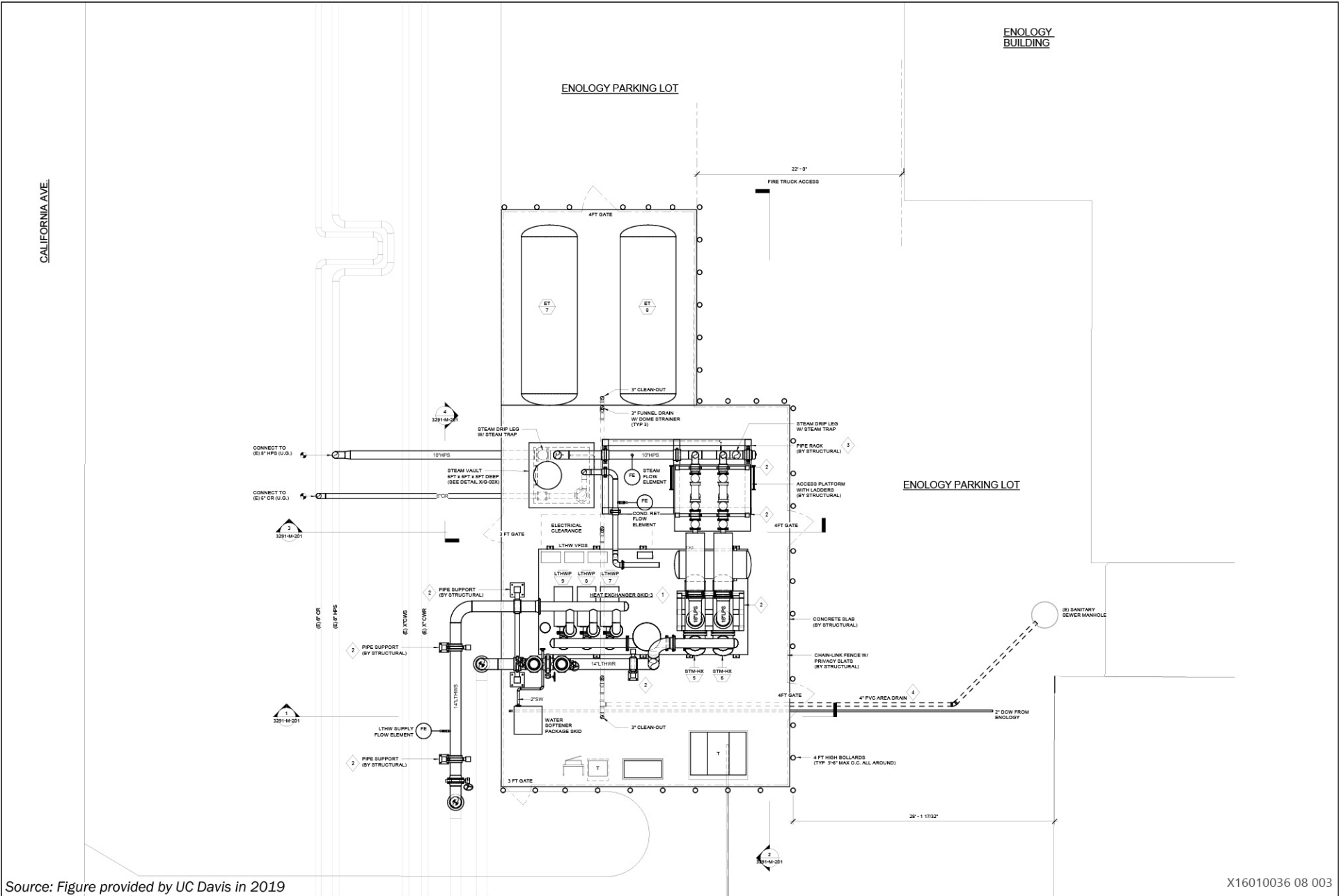


Source: Figure provided by UC Davis in 2018, adapted by Ascent Environmental in 2019



Source: Figure provided by UC Davis in 2019

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Source: Figure provided by UC Davis in 2019

X16010036 08 003

Installation of new underground piping from the Central Plant to the North Quad area would connect the hot water system to 2.8 million square feet of campus building along its path. Approximately 4 miles of underground supply and return piping would be installed, consisting of approximately 3 miles of main lines and approximately 1 mile of lateral lines that would run along Tercero Hall Circle, Bioletti Way, Hutchison Drive, California Avenue, Peter J Shields Avenue, North Quad Avenue, and East Quad Avenue (Figure 3-3). The new hot water supply and return pipelines would follow the existing steam pipe routes, to the extent possible. Construction of the main lines would require trenches 5 to 10 feet deep and 5 to 10 feet wide, and the lateral supply and return lines would require trenches approximately 3 feet wide and 5 to 10 feet deep. The intention would be to bury the pipes shallow; however, there are some areas where pipes would need to be buried deeper to avoid other in-ground utilities. In addition, directional drilling may be utilized to install lateral lines to avoid disturbance of surface features such as paved paths and landscaping. Once the hot water system is installed, the existing steam pipes would be abandoned in place and surface conditions would be restored.

The buildings served by the new hot water system (Figure 3-3) would need to have the existing building heating, building domestic, and building industrial hot water exchangers replaced. All buildings connected to the new hot water distribution system would have their steam-hot water heat exchangers replaced with hot water-hot water heat exchangers for building heating. Most buildings would be fitted with electric hot water heaters for domestic use. Some buildings would require process/industrial water at a higher temperature than can be supplied by the hot water distribution system and would require electric industrial hot water heaters. Some buildings would require electric steam generators or local gas boilers or have building fixtures such as autoclaves and dishwashers that would be replaced or modified to run without district steam. Existing steam to hot water heat exchangers would be removed and disposed of off-site, as well as other abandoned equipment and facilities that conflict with the new equipment installation.

3.3.1 Construction

Construction is anticipated to begin in October 2019 and would take approximately 2 years to complete. Because the project components are distributed over a relatively large portion of the central campus, construction crews would access project components from various local roadways including Dairy Road, Hutchison Drive, and California Avenue. Construction staging would occur on existing improved surfaces adjacent to the work underway, to be reviewed and approved by the campus landscape architect. Construction staging would not be located on, and would not obstruct, local roadways.

The primary types of construction equipment would consist of concrete saws, excavators, rollers, and utility trenching equipment. Site disturbance would include minor demolition in exterior areas, trenching, tree removal, and concrete work. No heritage or protected trees would be removed. No building demolition would occur. However, that asphalt or concrete areas at the Central Plant and next to the Enology Building would be demolished to install a structural concrete slab to support the new distribution heat exchangers. After pipelines are installed, surface conditions would be restored to pre-project conditions. Interior work on mechanical equipment would occur at the Central Plant and at the central campus building served by the new hot water system. Approximately 500 haul truck roundtrips are anticipated to deliver materials and dispose of removed equipment.

3.3.2 Operations

Operational and maintenance activities for the hot water distribution system would be minimal, consisting of periodic inspection of valves and oiling of pump motors. The new distribution heat exchangers would be actively monitored at all times, similar to existing operations at the Central Plant facilities. New equipment in buildings would require similar or less maintenance than the steam systems they would replace. Operation and maintenance of the hot water system would be implemented by existing UC Davis staff; no new permanent staff would be required.

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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 State CEQA Guidelines Section 15162 calling for the 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 Hutchison Quad Hot Water Conversion 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 Project would support the academic enterprise by replacing the old and inefficient campus steam distribution system with a new energy efficient hot water system that would meet laboratory process loads while providing building heat and hot water.

Enrich Community Life: The Project would indirectly support enrichment of community life by providing a more efficient and reliable building heating, building domestic, and building industrial hot water system, which would benefit UC Davis students and staff.

Create a Sustainable Future: The Project would replace the old and inefficient campus steam distribution system with a new energy efficient hot water system, which would result in considerable energy and water savings in the long-term. The Project is consistent with UC Davis sustainability and conservation efforts.

4.2 2018 LRDP CAMPUS POPULATION

The Project would not introduce new students or staff and would not contribute to an increase in the campus population. The Project is therefore within the scope of the 2018 LRDP population projections.

4.3 2018 LRDP LAND USE DESIGNATION

The 2018 LRDP *Campus Utility* land use designation includes a domestic water supply system, two separate irrigation systems for central campus landscapes and agricultural fields, a storm water drainage system with localized green infrastructure, a treatment facility for campus sewage, an electrical system for the production and distribution of electricity as well as the interconnection with the main electrical grid and natural gas network, a remnant landfill, a telecommunication network, and a heating and cooling system for core campus that relies upon water as a thermal medium to both heat and cool buildings. While the *Campus Utility* land use designation includes the major components of campus infrastructure, the alignment of utilities distribution and collection networks often coincides with or crosses through other land use designations.

The majority of the project footprint is designated by the 2018 LRDP as *Campus Utility*, which is consistent with its existing land use designation. Although some project elements, such as installation of new underground piping, would cross through other land use designations, this is allowable for utility infrastructure under the 2018 LRDP.

4.4 2018 LRDP ACADEMIC BUILDING SPACE

The Project would replace and upgrade existing utilities infrastructure, which serves numerous central campus academic buildings. However, the Project would not demolish nor develop any academic building space on campus. The Project would not contribute to the increase in academic building space anticipated by the 2018 LRDP and 2018 LRDP EIR.

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 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, Including Impacts that Would Otherwise be New or Substantially More Severe?: This question is answered with a “yes” or “no,” as substantiated by the discussion provided below the table. 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	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, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...				
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	N/A

*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 majority of Project facilities would be underground pipelines and mechanical equipment within the buildings. The two new heat exchangers would be above ground facilities, but one would be within the fenced area of the Central Plant, surrounded by other mechanical equipment and the other would be fenced within the parking lot next to the Enology Building. 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, nor would it alter views from the west campus. Development of the Project would not alter a scenic vista from within or across the central campus because the Project would consist of underground piping, which would not be visible once installed, and the replacement or construction of utilities infrastructure of similar visual character. 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, I-80 and 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 and with 2018 LRDP EIR Impact 3.1-2 (less than significant), the Project spans from the Central Plant to the North Quad area. The Project would be consistent with the *Campus Utilities* land use and would conserve the existing pattern of uses on the central

campus. The majority of project facilities would be underground pipelines and mechanical equipment within the buildings. The two new heat exchangers would be above ground facilities, but one would be within the fenced area of the Central Plant, surrounded by other mechanical equipment and the other would be fenced within the parking lot next to the Enology Building, resulting in a minor modification of existing visual character. The Project would be designed in accordance with the UC Davis Physical Design Framework and Campus Design Guide Manual. 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. 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; less than significant with mitigation). The Project does not include new lighting. The new distribution heat exchangers are largely non-reflective, although limited sections of aluminum jacketing may be a source of glare. The heat exchangers would be located within the fenced area of the Central Plant, surrounded by other mechanical equipment, and surrounded by slatted chain-link fencing in the parking lot next to the Enology Building. The enclosures would provide screening, and reflective surfaces would be painted, reducing the potential for glare. Therefore, no new or substantially more severe impacts would occur and no 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 & Forestry Resources		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, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...	Impact Examined in 2018 LRDP EIR?			
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, 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 LRDP 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 timber-production lands. 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. 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	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, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...				
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 reactive organic gases (ROG), oxides of nitrogen (NO_x), and particulate matter with an aerodynamic diameter of 10 microns or smaller (PM₁₀) that would exceed Yolo-Solano Air Quality Management District's (YSAQMD) 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), trenching, use of heavy-duty off-road equipment, material delivery and removal, worker commute exhaust emissions, and asphalt paving. Fugitive dust emissions, including PM₁₀ and particulate matter with an aerodynamic diameter of 2.5 microns or smaller (PM_{2.5}), would be generated during site preparation and trenching and vary as a function of soil silt content, soil moisture, wind speed, and area of disturbance. Exhaust emissions of PM₁₀ and PM_{2.5} would result from combustion of fuels. Ozone precursor emissions would primarily be associated with exhaust from 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. In the case of the Project, academic space would not be added and construction would be minor. Project construction would generate temporary air pollutant emissions that 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 PM₁₀ 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, with implementation of Mitigation Measure 3.3-1, would not generate construction-related emissions of ROG or PM₁₀ 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 PM₁₀ 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 National Ambient Air Quality Standards and California Ambient Air Quality Standards 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.

Project operations and maintenance would be implemented by existing UC Davis staff. Increased operational vehicular use would be incidental. Indirect operational emissions would be generated through water and electricity consumption; however, the new hot water distribution system would be more efficient than the old steam distribution system, resulting in water and electricity savings and reduced indirect emissions. Project-related operational activities and associated emissions are minor and no new or substantially more severe impacts would occur and no mitigation would be required.

Mobile-Source Carbon Monoxide Concentrations

2018 LRDP EIR Impact 3.3-3 (less than significant) determined that long-term operation-related local mobile-source emissions of carbon monoxide (CO) generated by 2018 LRDP development would not violate a standard or contribute substantially to an existing or projected air quality violation or expose sensitive receptors to substantial pollutant concentrations. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed,

and delay. As discussed in 2018 LRDP EIR Section 3.16, “Transportation, Circulation, and Parking,” the increase in vehicle trips associated with buildout under the 2018 LRDP would not result in more than 10,000 vehicles per hour at any affected intersections, even under cumulative-with-project conditions. This means that Sacramento Metropolitan Air Quality Management District’s recommended screening criterion of 31,600 vehicles per hour would not be exceeded at any intersection.

The Project would replace existing infrastructure, is intended to serve the existing campus community, and would not generate new operational vehicle trips. As a result, project-generated, long-term operation-related local mobile-source emissions of CO are minor and would not result in any new or substantially more severe impacts, and no 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 toxic air contaminants (TACs), particularly diesel particulate matter (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 (less than significant with mitigation). Consistent with 2018 LRDP EIR Impact 3.3-4, Project-related construction activity would result in temporary, intermittent emissions of diesel PM from diesel equipment used during construction, over a two-year construction period. Diesel PM is highly dispersive and concentrations of diesel PM decline with distance from the source (e.g., decrease of 70 percent at 500 feet from a freeway) (Roorda-Knape et al. 1999 and Zhu et al. 2002, as cited in CARB 2005:9). The nearest sensitive receptors are student housing units on Tercero Hall Circle approximately 25 feet south of the southern-most pipeline alignment and approximately 75 feet south of the Central Plant, where one of the two heat exchangers would be located. The other pipelines and the second heat exchanger would be located farther north and farther from sensitive residential receptors. Given the short duration of construction at the Central Plant and along the pipeline alignment, Project construction-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, 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, no new or substantially more severe impacts would occur and no new mitigation measures would be required.

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 does not include operational sources of TAC emissions and 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 mitigation 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 introduce receptors in close proximity to existing sources of TACs and ultrafine particles (UFPs). The level of health risk associated with exposure to TACs from on-site and surrounding off-site sources would not be substantial.

However, residential receptors located closest to I-80 could be exposed to relatively high concentrations of UFPs generated by vehicles traveling on I-80 resulting in substantial levels of health risk.

The Project would not introduce any new or permanent receptors to the area, and Project components are located over 0.5 mile from I-80. Therefore, the Project would not introduce receptors to existing sources of TACs and UFPs from I-80. 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) As discussed in 2018 LRDP EIR Impact 3.3-7 (less than significant with mitigation), implementation of the 2018 LRDP would result in temporary construction odors over approximately 13 years in different areas of the 5,300-acre campus; as well as new odors sources such as diesel-fueled delivery trucks, a biomass boiler, composting facility, and expansion of the wastewater treatment plant. The Project would result in minimal and temporary odors during the two-year construction period, and in the long-term, the new hot water distribution system would not result in new sources of odors on campus, nor would the Project result in the relocation existing odor sources or the development of residences 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, & 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, Including Impacts That Would Otherwise be New or Substantially More Severe?
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	Yes	No	No	N/A
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	Yes	No	No	N/A
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.				

*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). However, the Project involves the replacement of existing utility infrastructure, which is not considered a historical resource, and would not result in modifications to the structure or façade of any buildings. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

- b) The 2018 LRDP EIR Impact 3.4-1 (less than significant with mitigation) determined that development under the 2018 LRDP EIR could result in adverse changes to archaeological resources due to existing areas of archaeological sensitivity, as shown on 2018 LRDP EIR Exhibit 3.4-1, and a “moderate” potential for encountering intact buried archaeological resources during excavation activities. Project construction would require trenching up to approximately 15 feet deep to install new underground pipelines. Although the project footprint is within highly-developed areas, a portion of the project footprint is within the areas of archaeological sensitivity (2018 LRDP Exhibit 3.4-1). 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 to 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) Consistent with 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 Native American Heritage Center (NAHC) immediately, according to Section 5097.98 of the State PRC 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 PRC Section 5097.94. Compliance with California Health and Safety Code Sections 7050.5 and 7052 and California PRC 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 Assembly Bill (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.

4.5.5 Biological Resources

Section 3.5 of the 2018 LRDP EIR addresses the effects of campus growth and development 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	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, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	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 2018 LRDP EIR defines the project site as urban landscaping /developed habitat (2018 LRDP EIR Exhibit 3.5-1). The project site is within the central campus and is developed. The proposed pipelines would follow existing roads and the existing underground steam pipeline alignments, would replace equipment within buildings, and would install new mechanical

equipment within the Central Plant and a parking lot. Portions of the project site that are not occupied by pavement, buildings, or equipment include landscaping, and landscape trees. The project site does not support habitat for sensitive plants and 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 (2018 LRDP EIR Impact 3.5-2 through 3.5-8). Based on a review of the sensitive plant and wildlife species within the vicinity of the project site (CNDDDB 2019, CNPS 2019), there is potential for Swainson's hawk, white-tailed kite, and other nesting birds (non-special-status) to occur.

Swainson's hawks and white-tailed kites are known to nest within the central campus (CNDDDB 2019). There are two known nesting occurrences of Swainson's hawk within the project site and two known nesting occurrences of white-tailed kite within approximately 2 miles of the project site (CNDDDB 2019). Potentially suitable nesting habitat for both species is present on the project site within large landscape trees. Project construction activities, including vehicle use, ground disturbing activities, construction crews within close proximity of nesting trees, and disturbance to or removal of nesting trees could result in a potentially significant impact to Swainson's hawk and white-tailed kite if present. 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.

The landscape trees on the project site could also provide suitable nesting habitat for common native songbirds that are not special-status species. Disturbance to or removal of nesting trees, or disturbance due to construction crews or equipment within close proximity of the nesting trees could result in a potentially significant impact to these nesting birds, if present. Mitigation Measure 3.5-6 (1 and 2) from the 2018 LRDP EIR would be implemented as part of the Project to prevent disturbance to non-special-status bird nests. Therefore, no new or substantially more severe impacts would occur.

- 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. The Project components are approximately 0.3 mile north of the riparian corridor along the historic fork of Putah Creek within the UC Davis Arboretum. The Project footprint is developed and is surrounded by roads and other facilities within the developed central campus. The project site does not contain riparian habitat or wetlands. 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 components are on the central campus, outside of the Putah Creek corridor and its associated riparian habitat. 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. Per LRDP EIR Mitigation Measure 3.5-11, a tree survey of the project site was completed and it was determined that the Project would not result in the removal of any protected trees. Therefore, no new or substantially more severe impacts would occur and no additional mitigation would be 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, which was the status of the HCP/NCCP at the time. However, the 2018 LRDP EIR provided information on the Yolo County HCP/NCCP and the Solano County Multi-Species Habitat Conservation Plan 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) above, to minimize impacts to special status species. 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	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, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...				
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. Use of construction equipment and associated energy consumption would be typical of that associated with construction of utility infrastructure. Idling of onsite equipment during construction would be limited to no more than five minutes in accordance with YSAQMD requirements. Further, onsite 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.

During operation, project energy consumption would be reduced compared to the operation of the old steam distribution system. Heating with hot water is more energy and water efficient than heating with steam, as less heat is lost during transfer through underground piping. Furthermore, many of the existing steam distribution lines are only 50 percent efficient due to older parts and degraded pipe insulation material. The Project would result in improved energy efficiency. Thus, the Project's energy consumption would be minor and 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, Including Impacts That Would Otherwise be New or Substantially More Severe?
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, and the campus is not subject to surface fault rupture. The 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 (less than significant), 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 Project would not exacerbate seismic hazards and, as utility infrastructure, would not result in development of structures that expose more people to seismic-related risks. 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 campus would not be subject to landslides; and this issue was not discussed further in the 2018 LRDP EIR. Because the project site is located within the UC Davis campus, it would also 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. However, campus projects 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. The Project would involve excavation for the installation of new underground pipeline. Project components are located on Sycamore, Reiff, and Yolo series soils (2018 LRDP EIR Exhibit 3.7-1). These soil types are generally well drained and exhibit moderately slow to moderately rapid permeability, very slow to medium runoff, and low hazard of erosion, although, there is an elevated risk of erosion associated with construction activity, such as grading and excavations. However, the Project would also have to comply with relevant NPDES permits, including the General Construction Permit and the Phase II Small MS4 Permit. 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), implementation of the 2018 LRDP would involve changes to the existing stormwater infrastructure at sites where there is redevelopment, and new stormwater infrastructure at new development sites. 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. The Project would not involve changes to existing stormwater drainage or retention. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

- c) As discussed in 2018 LRDP EIR Impact 3.7-2 (less than significant), soils on campus exhibit characteristics which could make them susceptible to liquefaction; however, depth to groundwater on campus is relatively deep (30 to 80 feet below ground surface), which provides a mitigating effect because most soils are not continuously saturated. Therefore, many campus soils that are characterized as susceptible in literature may be discovered to be not so during geotechnical investigations. The Project includes development of utilities infrastructure that would not require structural fill or the construction of major structures that would be susceptible to liquefaction. Therefore, no new or substantially or 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. 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. Groundwater extractions from the shallow/intermediate aquifer are would not increase with implementation of the Project. 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. Shrinking and swelling can result in differential ground movement, which can cause damage to building foundations. The project site is located on Sycamore, Reiff, and Yolo series soils (2018 LRDP EIR Exhibit 3.7-1), which have a low to moderate shrink-swell potential. In addition, the Project includes development of utilities infrastructure that would not include the construction of any buildings or building foundations. 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. These alluvial deposits contain vertebrate and invertebrate remains of extant, modern taxa, which are generally not considered paleontologically significant. 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 2018 LRDP EIR determined that the 2018 LRDP would not impact paleontological resources. Because the project site is within the area analyzed within the 2018 LRDP EIR, this issue is not relevant to the 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, Including Impacts That Would Otherwise be New or Substantially More Severe?
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. However, 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. 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, would be consistent with the statewide GHG reduction goals, and would not considerably contribute to climate change.

Given the short-term nature (two years) of Project construction and the limited ground disturbance for trenching and installation of the heat exchangers, the Project would result in small quantities of GHG emissions. These would result from trenching, construction vehicle trips, and construction equipment use. Operational GHG emissions would be generated through water and electricity consumption; however, project energy consumption would be reduced compared to the operation of the old steam distribution system. Heating with hot water is more energy and water efficient than heating with steam, as less heat is lost during transfer through underground piping. Furthermore, many of the existing steam distribution lines are only 50 percent efficient due to older parts and degraded pipe insulation material. Therefore, the Project would result in improved energy efficiency and reduced indirect GHG emissions. Furthermore, the Project is intended to serve the existing campus community and is would not generate new operational vehicle trips. Thus, no substantial long-term operational emissions of GHGs would result from Project implementation. 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, implementation of the 2018 LRDP would achieve targets established in the UC Sustainable Practices Policy through anticipated planning and policy actions. Achievement of the Sustainable Practices Policy would meet or exceed statewide targets for 2030 and not impede the ability to achieve statewide 2050 targets, including continued implementation of the Sacramento Area Council of Government's (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS).

As discussed in Sections 4.1 through 4.4 of this addendum, the Project is consistent with the 2018 LRDP and its land use designation. As discussed in response a) above, the Project would not result in any significant short-term or long-term GHG contributions, and would result in improved energy efficiency. Thus, the Project would not conflict with University of California Sustainable Practices Policy, the UC Davis Climate Action Plan, SACOG's 2035 MTP/SCS, or any other plan, policy, or regulation adopted for the purpose of 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		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, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...	Impact Examined in 2018 LRDP EIR?			
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	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 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	N/A
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) LRDP EIR Impact 3.9-1 determined that construction and operation of the development identified in the 2018 LRDP would result in the 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.

Consistent with the LRDP, 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 pavement). However, the construction-related transport, use storage, and disposal of hazardous materials would be temporary, occurring over two years. Furthermore, the State Water Resources Control Board's 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. Therefore, no significant hazards would be created during construction activities.

Typical operations and maintenance activities would be minimal, consisting of periodic inspection of valves and oiling of pump motors. 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. The Project would adhere to existing regulations and compliance with the safety procedures mandated by applicable federal, state, university, and local laws and regulations, which 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 components are located over 0.3 miles 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), grading and excavation activities may expose construction workers and the public to hazardous substances present in the soil (such as naturally occurring asbestos [NOA]) or groundwater). Although contaminated groundwater and NOA are not anticipated to be encountered in the Project area, undocumented contamination could be present. 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. Implementation of regulatory requirements and Mitigation Measure 3.9-2b 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.

- 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 occur primarily during construction (up to two years) and 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). As discussed in the 2018 LRDP EIR Impact 3.9-2 (less than significant with mitigation), 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 Measure 3.9-2b, which would 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.
- e) As discussed in 2018 LRDP EIR Impact 3.9-5 (less than significant), areas of the campus are within University Airport's horizontal and conical surfaces, which are intended to protect airspace near airfields from buildings and other structures that could inhibit safe approaches and takeoffs to and from the airfield. The horizontal surface is 219 feet at its lowest point over areas of the 2018 LRDP within which development may occur. Under the 2018 LRDP, buildings would not exceed 6 stories or approximately 80 feet in height, which would not conflict with airport building height restrictions. Although Project components are located within the airport's conical surface, Project components would be underground or within buildings, and the heat exchangers would not exceed 80 feet in height. Therefore, the Project would not conflict with airport operations. No new or substantially more severe impacts would occur and no mitigation would be required.
- 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 the Project.
- g) Consistent with 2018 LRDP Impact 3.9-6 (less than significant with mitigation), Project-related construction could result in short-term, temporary impacts to street traffic as a result of trenching to install pipelines, construction vehicles, and haul truck trips. This could result in temporary traffic slowdowns or road closures; such impacts would be short in duration, during installation of underground pipe segments, and would affect only adjacent streets or intersections. Furthermore, to maintain adequate emergency response during construction, which will affect roadways, UC Davis shall prepare and implement a site-specific construction traffic management plan per Mitigation Measure 3.9-6 to further mitigate temporary construction impacts. 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 UC Davis LRDP area is not located in or near a fire hazard severity zone established by the California Department of Forestry and Fire Protection. The potential for wildland fire is low. The Project would not change this and 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		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, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...	Impact Examined in 2018 LRDP EIR?			
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	N/A
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	N/A
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	N/A
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	N/A
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
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*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 state-wide 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 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 trenching for pipelines and ground disturbance to install the heat exchangers, 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. Because pipelines would be undergrounded, mechanical equipment would be inside buildings, and the heat exchangers would be located on existing paved surfaces, the Project would not create new impervious areas and thus, would not contribute additional stormwater runoff. 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), 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, which involves no wastewater generation, would not contribute to this increase. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

b) Deep Aquifer. As described in 2018 LRDP EIR 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 not result in an increase in demand. 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. Because pipelines would be undergrounded, mechanical equipment would be inside buildings, and the heat exchangers would be located on existing paved surfaces, the Project would not change the amount of impervious surfaces or affect recharge infiltration patterns. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

c,d,e) The 2018 LRDP EIR Impact 3.10-6 found that new development on campus would result in an overall increase in impervious surfaces and produce changes to site-specific drainage, stormwater runoff, and infrastructure (less than significant with mitigation). The Project would not change the amount of impervious surfaces or affect recharge infiltration patterns. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

Water quality impacts related to stormwater runoff are evaluated in criteria (a) and (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). 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 in the event of dam failure. However, the dam structure is carefully managed by state and federal agencies and is capable of withstanding strong seismic shaking. As described in 2018 LRDP EIR Impact 3.10-8 (less than significant), the risk of inundation of any portion of the campus 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) UC Davis is not subject to inundation by seiche, tsunami, or mudflow. The campus is generally flat and is not located near any large water bodies. This issue is not relevant to the 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 and development 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	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, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...				
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 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; less than significant). The Project would replace the old and inefficient campus steam distribution system with a new high energy efficient hot water system consistent with the *Campus Utility* designation. While the *Campus Utility* land use designation includes the major components of campus infrastructure, the alignment of utilities distribution and collection networks often coincides with or crosses through other land use designations. The majority of the project footprint is designated by the 2018 LRDP as *Campus Utility*, which is consistent with its existing land use designation. Although some project elements, such as installation of new underground piping, would cross through other land use designations, this would be allowable for utility infrastructure under the 2018 LRDP. The Project would support campus conservation goals, 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 (significant and unavoidable) regarding land use compatibility with off-site sources of toxic air contaminants and UFPs. The Project is compatible with surrounding central campus athletic, 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, Including Impacts That Would Otherwise be New or Substantially More Severe?
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 area, including the project area, 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 area, including the project area, is not indicated as a locally important mineral resource site and the 2018 LRDP EIR 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	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, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...				
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	Yes
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 disturb people. 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 area, which is on the central campus between the Central Plant and the Enology Building. Construction of the Project is anticipated to occur over approximately two years, beginning in October 2019. Construction activity would involve the use of heavy mechanical equipment, which would result in a noise level increase in the Project area, although noise level increases would be temporary and would vary considerably depending on the construction phase. No blasting or pile

driving would occur. Based on Project characteristics and consistent with the assumptions of the 2018 LRDP EIR Impact 3.12-1, the greatest noise levels would occur during concrete or asphalt cutting activities.

2018 LRDP EIR Mitigation Measure 3.12-1 requires construction noise minimization measures, including limiting the hours when construction activity can take place (i.e., 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 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). Implementation of Mitigation Measure 3.12-1 prevent the exposure of noise-sensitive receptors to construction noise that exceeds the significance criterion of 80 decibels (dB) energy-equivalent noise level. Therefore, no new or substantially more severe impacts would occur and no new mitigation would be required.

Operational Noise – Stationary Noise Sources. To evaluate increases in Project-generated operational noise sources, the applicable noise limit of 70 A-weighted decibels (dBA) community noise equivalent level (CNEL) (equivalent to 63.3 dBA equivalent noise level [L_{eq}]) for residential land uses was applied. The 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 exceed this noise limit.

The two new distribution heat exchangers would be expected to generate noise levels of 87 dBA at 15 feet, mainly resulting from the pressure-reducing valves. The nearest residential receptor to the new distribution heat exchangers would be the Hawthorn Residence Hall, located 85 feet south of the Central Plant. Noise levels from the distribution heat exchanger would attenuate to 72 dBA L_{eq} at this distance (see Appendix A for calculations). Furthermore, typical residential structures with windows closed achieve a 25-30 dBA exterior-to-interior noise reduction (Caltrans 2002). Therefore, the new heat exchangers would comply with the applicable noise standard of 70 dBA CNEL for sensitive receptors. Furthermore, per 2018 LRDP EIR Mitigation Measure 3.12-2, UC Davis shall review and ensure that the Project's external mechanical equipment, the new heat exchangers, incorporate features designed to reduce noise to below 70 dBA CNEL (63.3 dB L_{eq}) at any nearby building where people sleep. If necessary, 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 would be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors. 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 is intended to serve the existing campus community and is not expected to generate new operational vehicle trips. 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. The Project would require trenching, minor demolition, and installation of pipes and equipment; however, this is typical construction activity and would not generate substantial levels of vibration or groundborne noise. 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. Project operations would not involve truck trips; this issue is not relevant to the Project.

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 (less than significant with mitigation). However, the project site is not within 750 feet of existing rail lines and would not involve construction of housing. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

- e) 2018 LRDP EIR Impact 3.12-3 discusses 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 (less than significant with mitigation). 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, and 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 the Project components are located approximately 1.5 miles east of the University Airport and outside of the airport's 55 dB CNEL. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.
- 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, Including Impacts That Would Otherwise be New or Substantially More Severe?
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 Project consists of the replacement of old, inefficient utility infrastructure with new, more efficient infrastructure in order to accommodate existing demand for heat and hot water. The Project would not induce substantial population growth or create a demand for housing. Therefore, these issues are not relevant to the Project.

b,c) No housing units exist on the project footprint. The Project would not displace any existing housing units or people. Therefore, this issue is not relevant to the 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	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, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	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 would not result in the need for additional fire or police protection facilities as it would accommodate existing demand for building heating, building domestic, and building industrial hot water on campus. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

As identified in 2018 LRDP EIR Impact 3.14-3 (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 not contribute to this demand. 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 not contribute to this demand because it would not involve additional student or staff population. 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	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, Including Impacts That Would Otherwise be New or Substantially More Severe?
Would the Project...				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	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 not increase student or staff population and thus would not contribute to a demand for recreation facilities. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.
- b) The Project does not include the construction or expansion of recreational facilities. No new or substantially more severe impacts would occur and no 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 and development 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, Including Impacts That Would Otherwise be New or Substantially More Severe?
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	N/A
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	N/A
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	N/A

*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, such as deliveries of materials (up to 500 haul truck roundtrips over 20 months), construction equipment trips, and construction labor commute trips. There would be no change in operations, no new staff, and no new vehicle trips.

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 traffic would contribute to 2018 LRDP EIR Impact 3.16-2; however, the Project contribution is within the scope of traffic volumes contemplated by the 2018 LRDP EIR. 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. University 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. The Project would result in no permanent changes to the roadway system, nor would it result in any new design features or other incompatible uses that could increase roadway hazards. Furthermore, the Project would not result in any growth in student or staff population. Therefore, no new or substantially more severe impacts would occur and no 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 could result in temporary road closures. However, Project impacts would be short in duration, during installation of underground pipe segments, and would affect only adjacent streets or intersections. Furthermore, preparation and implementation of a Construction Traffic Management Plan, as required by 2018 LRDP EIR Mitigation Measure 3.9-6, 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. The Project would not result in permanent modification of any roads or otherwise affect emergency response times and would maintain adequate emergency access. Therefore, no new or substantially more severe impacts would occur and no new 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 Project would not result in any permanent changes to the roadway, bike, or pedestrian systems. Thus, the Project would not conflict with any with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Therefore, no new or substantially more severe impacts would occur and no 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 and development 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, Including Impacts That Would Otherwise be New or Substantially More Severe?
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	N/A
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,b,e) As described in 2018 LRDP EIR Impact 3.17-1 (less than significant), the permitted peak monthly average capacity of the campus wastewater treatment plant is currently 3.85 million gallons per day (mgd), which can accommodate the projected growth under the 2018 LRDP. As described in 2018 LRDP EIR Impacts 3.17-2 and 3.17-3 (less than significant), development under the LRDP would not require additional or expanded facilities. The Project would not result in any growth, would result in water savings in the long-term, and would not increase wastewater requiring treatment. 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. The Project would not increase the amount of impervious surfaces nor would it result in changes to stormwater infrastructure or drainage patterns. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.
- d) Water used within the UC Davis campus is provided by three major sources: Woodland-Davis Clean Water Agency surface water, Solano County Water Agency surface water, and groundwater. As described in 2018 LRDP Impact 3.17-1 (less than significant), It was determined that sufficient water supplies are available to meet projected demand and no new or expanded entitlements would be required. The Project would replace the old and inefficient campus steam distribution system with a new energy efficient hot water system. The Project would accommodate existing demand for heat and hot water and would not generate new service populations. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.
- f,g) The 2018 LRDP EIR Impact 3.17-4 (less than significant) determined that Yolo County Central Landfill could accommodate any waste generated by implementation of the 2018 LRDP. 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). The 2018 LRDP EIR Impact 3.17-4 (less than significant) also found that implementation of the 2018 LRDP would comply with the UC Sustainable Practices Policy would continue to reduce landfill contributions, consistent with California Integrated Waste Management Act, AB 341, Senate Bill (SB) 1374, AB 1826, and SB 1383.

Construction and operation associated with the Project would not generate substantial waste as demolition waste would be minor and no new waste generating activities or populations would be created by the Project. Therefore, no new or substantially more severe impacts would occur and no mitigation would be required.

- h) The 2018 LRDP EIR identified that campus development under the 2018 LRDP would require extension of electrical utilities as well as the extension or renovation of steam and chilled water 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]). The Project would replace the campus steam distribution system with a hot water system. The potential impacts associated with construction of the new hot water system are described throughout this addendum. The impacts may include the construction-related effects described in the 2018 LRDP EIR and summarized in this addendum for air quality, biological resources, cultural resources, hydrology and water quality, and noise. No new or substantially more severe impacts would occur and no mitigation would be required.

- i) The Project does not require telecommunication facilities. Therefore, this issue is not relevant to the Project.

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 Hutchison Quad Hot Water Conversion 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 Hutchison Quad Hot Water Conversion Project.

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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 Hutchison Quad Hot Water Conversion.

AIR QUALITY

Mitigation Measure 3.3-1: Reduce construction-generated emissions of ROG, NO_x, and PM₁₀.

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 3.3-4: Reduce short-term construction-generated TAC emissions.

UC Davis shall require construction activities under the 2018 LRDP to follow YSAQMD recommended mitigation measures for construction exhaust emissions. To ensure sensitive receptors are not exposed to substantial TAC concentrations, UC Davis shall require its prime construction contractor to implement the following measures prior to project approval:

- 1) Locate operation of diesel-powered construction equipment as far away from sensitive receptors as possible;
- 2) Limit excess equipment idling to no more than 5 minutes;

- 3) Use construction equipment with engine ratings of Tier 3 or better (included in Mitigation Measure 3.3-1); and
- 4) Use electric, compressed natural gas, or other alternatively fueled construction equipment instead of the diesel counterparts, where available.

In addition, for any construction site located within 150 feet of a childcare center or park/recreation field, UC Davis shall schedule the use of heavy construction equipment to times when children are not present. Alternatively, UC Davis shall arrange for temporary relocation of childcare facilities to areas outside of a 150-foot buffer or temporarily close available park space within the 150-foot buffer during operation of heavy construction 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.

BIOLOGICAL RESOURCES

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 3.5-6: Tricolored blackbird avoidance.

With respect to any construction activities undertaken for a particular project under the 2018 LRDP, the following measures will be implemented to avoid or minimize loss of active tricolored blackbird or other bird nests:

- 1) To minimize the potential for loss of tricolored blackbird or other bird nests, vegetation removal activities will commence during the nonbreeding season (September 1 - January 31). If all suitable nesting habitat is removed during the nonbreeding season, no further mitigation would be required.
- 2) Prior to removal of any vegetation, or any ground-disturbing activities between February 1 and August 31, a qualified biologist will conduct preconstruction surveys for nests on any or vegetation slated for removal, as well as for potential tricolored blackbird nesting habitat. The surveys will be conducted no more than 14 days before construction commences. If no active nests or tricolored blackbird colonies are found during focused surveys, no further action under this measure will be required. If active nests are located during the preconstruction surveys, the biologist will notify CDFW. If necessary, modifications to the project design to avoid removal of occupied habitat while still achieving project objectives will be evaluated and implemented to the extent feasible. If avoidance is not feasible or conflicts with project objectives, construction will be prohibited within a minimum of 100 feet of the outer edge of the nesting colony to avoid disturbance until the nest colony is no longer active.

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).

HAZARDS AND HAZARDOUS MATERIALS

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 3.9-6. 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.

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 on-campus housing and may result in temporary noise levels in excess of 86 dBA L_{max} at the exterior of the adjacent housing structure, 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.

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6 REFERENCES

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Appendix A

Noise Calculations

Attenuation Calculations for Stationary Noise Sources

- KEY:** Orange cells are for input.
 Grey cells are intermediate calculations performed by the model.
 Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor		
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)
Heat Exchanger	87.0	@	15	hard	12	5	0.00	71.9	@	85
				hard			0.00			
							0.66			
							0.66			
							0.66			
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Notes:
 Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 12-3 and 12-4 of FTA 2006.
 Computation of the ground factor is based on the equation presented in Figure 6-23 on pg. 6-23 of FTA 2006, where the distance of the reference noise level can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

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