DRAFT

CENTRAL UTILITY PLANT EXPANSION PROJECT ENVIRONMENTAL IMPACT REPORT

PREPARED FOR:

University of California Davis
Campus Planning and Environmental Stewardship
University of California, One Shields Avenue
Davis, CA 95616
Contact: Heather Davis
Interim Director of Environmental Planning
530.759.3766

PREPARED BY:

ICF
980 9th Street, Suite 1200
Sacramento, CA 95814
Contact: Lindsay Christensen
916.737.3000

September 2023

ICF. 2023. *Central Utility Plant Expansion Project*. Administrative Draft Environmental Impact Report. September. (ICF 104689.0.005) Sacramento, CA. Prepared for University of California, Davis, CA.

Contents

List of Tables iv
List of Figures vii
List of Acronyms and Abbreviations viii
Executive Summary ES-1
ES.1 Introduction ES-1
ES.2 Summary Project Description ES-1
ES.3 Objectives of the CUP Expansion Project ES-2
ES.4 Summary of Environmental Impacts and Mitigation Measures ES-2
ES.5 Significant and Unavoidable Environmental Impacts ES-3
ES.6 Alternatives to the CUP Expansion Project ES-3
ES.7 Areas of Controversy ES-4
ES.8 Mitigation Monitoring and Reporting Program ES-4
Chapter 1 **Introduction 1-1**
1.1 Purpose and Intended Use of the EIR 1-1
1.2 Lead Agency 1-1
1.3 Tiering 1-1
1.4 Relationship to Long-Range Development Plan 1-2
1.4.1 Baseline 1-2
1.4.2 Changes since the 2020 LRDP Update 1-2
1.4.3 California Hospital Tower Project EIR 1-2
1.4.4 Sacramento Ambulatory Surgery Center Project (48X) 1-3
1.4.5 Review and Certification Process 1-3
1.5 Responsible and Trustee Agencies 1-5
1.5.1 State 1-5
1.5.2 Local 1-5
1.6 Organization of the Draft Supplemental EIR 1-6
Chapter 2 **Project Description: Central Utility Plant Expansion 2-1**
2.1 Project Background 2-1
2.1.1 Central Utility Plant Existing Facilities 2-2
2.1.2 Previously Approved CUP Improvements 2-2
2.1.3 Future Phases – Not a Part of the Project Evaluated in this EIR 2-3
2.2 Central Utility Plant Expansion Project 2-4
2.2.1 Project Location 2-4
2.2.2 Goals and Objectives of the CUP Expansion Project 2-4

2.2.3 Sacramento Campus Growth 2-4
2.2.4 Project Components 2-7
2.3 Anticipated Approvals and Permits 2-16
Chapter 3 **Existing Environmental Setting, Impacts, and Mitigation 3-1**
3.0 Introduction to the Analysis 3-1
3.0.1 Terminology Used in the EIR 3-3
3.0.2 University of California Autonomy 3-4
3.1 Aesthetics 3.1-1
3.1.1 Existing Conditions 3.1-1
3.1.2 Environmental Impacts 3.1-11
3.2 Air Quality 3.2-1
3.2.1 Existing Conditions 3.2-1
3.2.2 Environmental Impacts 3.2-6
3.3 Biological Resources 3.3-1
3.3.1 Existing Conditions 3.3-1
3.3.2 Environmental Impacts 3.3-4
3.4 Archaeological, Historical, and Tribal Cultural Resources 3.4-1
3.4.1 Existing Conditions 3.4-1
3.4.2 Environmental Impacts 3.4-6
3.5 Energy 3.5-1
3.5.1 Existing Conditions 3.5-1
3.5.2 Environmental Impacts 3.5-3
3.6 Geology, Soils, and Seismicity 3.6-1
3.6.1 Existing Conditions 3.6-1
3.6.2 Environmental Impacts 3.6-2
3.7 Greenhouse Gas Emissions 3.7-1
3.7.1 Existing Conditions 3.7-1
3.7.2 Environmental Impacts 3.7-5
3.8 Hazards and Hazardous Materials 3.8-1
3.8.1 Existing Conditions 3.8-1
3.8.2 Environmental Impacts 3.8-5
3.9 Hydrology and Water Quality 3.9-1
3.9.1 Existing Conditions 3.9-1
3.9.2 Environmental Impacts 3.9-7
3.10 Land Use and Planning 3.10-1
3.10.1 Existing Conditions 3.10-1
3.10.2 Environmental Impacts 3.10-2

3.11 Noise 3.11-1
3.11.1 Existing Conditions 3.11-1
3.11.2 Environmental Impacts 3.11-9
3.12 Population and Housing 3.12-1
3.12.1 Existing Conditions 3.12-1
3.12.2 Environmental Impacts 3.12-2
3.13 Public Services 3.13-1
3.13.1 Existing Conditions 3.13-1
3.13.2 Environmental Impacts 3.13-4
3.14 Recreation 3.14-1
3.14.1 Existing Conditions 3.14-1
3.14.2 Environmental Impacts 3.14-2
3.15 Transportation and Circulation 3.15-1
3.15.1 Existing Conditions 3.15-1
3.15.2 Environmental Impacts 3.15-5
3.16 Utilities and Service Systems 3.16-1
3.16.1 Existing Conditions 3.16-1
3.16.2 Environmental Impacts 3.16-6
Chapter 4 **Alternatives 4-1**
4.1 Introduction 4-1
4.2 Project Overview 4-1
4.2.1 Project Objectives 4-2
4.3 Significant and Unavoidable Impacts 4-2
4.4 Alternatives Considered but Dismissed 4-2
4.5 Alternatives Considered in Detail 4-4
4.5.1 Evaluation of Alternatives 4-5
4.6 Comparison of Alternatives 4-12
4.7 Environmentally Superior Alternative 4-13
Chapter 5 **References Cited 5-1**
5.0 Executive Summary 5-1
5.1 Chapter 1, Introduction 5-1
5.1.1 Personal Communications 5-1
5.2 Chapter 2, Project Description 5-1
5.2.1 Personal Communications 5-1
5.3 Chapter 3, Existing Environmental Setting, Impacts, and Mitigation 5-2
5.3.1 Section 3.1, Aesthetics 5-2
5.3.2 Section 3.2, Air Quality 5-2

5.3.3 Section 3.3, Biological Resources 5-4
5.3.4 Section 3.4, Archaeological, Historical, and Tribal Cultural Resources 5-4
5.3.5 Section 3.5, Energy 5-4
5.3.6 Section 3.6, Geology, Soils, and Seismicity 5-5
5.3.7 Section 3.7, Greenhouse Gas Emissions 5-5
5.3.8 Section 3.8, Hazards and Hazardous Materials 5-6
5.3.9 Section 3.9, Hydrology and Water Quality 5-6
5.3.10 Section 3.10, Land Use and Planning 5-7
5.3.11 Section 3.11, Noise 5-7
5.3.12 Section 3.12, Population and Housing 5-8
5.3.13 Section 3.13, Public Services 5-8
5.3.14 Section 3.14, Recreation 5-8
5.3.15 Section 3.15, Transportation and Circulation 5-8
5.3.16 Section 3.16, Utilities and Service Systems 5-9
5.4 Chapter 4, Alternatives 5-9
Chapter 6 **Preparers 6-1**
6.1 EIR Authors 6-1
6.1.1 University of California, Davis 6-1
6.1.2 ICF 6-1
6.1.3 Fehr & Peers 6-1

Appendix A Notice of Preparation
Appendix B Air Quality Modeling Outputs
Appendix C Cultural Resources Consultation
Appendix D Noise Modeling Outputs

Tables

Table ES-1. Summary of Impacts and Mitigation Measures ES-6
Table ES-2. CUP Expansion Project Mitigation and Monitoring Program ES-32
Table 2-1. Construction Sequencing 2-16
Table 3.2-1. Ambient Criteria Air Pollutant Monitoring Data (2019–2021) from the T Street Station 3.2-3
Table 3.2-2. SMAQMD's Cumulative Criteria Pollutant Mass Emission Thresholds 3.2-13
Table 3.2-3. Estimated Unmitigated Construction Criteria Pollutants and Precursors for the Make-Ready Projects and CUP Expansion (Excluding the SMUD Component) 3.2-17
Table 3.2-4. Estimated Construction Criteria Pollutants and Precursors for the Project (Excluding the SMUD Component) with Implementation of Mitigation Measures LRDP-AQ-2a, LRDP-AQ-2b, and LRDP-AQ-2c 3.2-18
Table 3.2-5. Estimated Operational Criteria Pollutants and Precursors for the Project 3.2-22
Table 3.2-6. Conservative Estimate of Increased Regional Health Effect Incidence Resulting from Implementation of the Project (cases per year) 3.2-25
Table 3.2-7. Estimated Maximum Cancer and Chronic Hazard Risks from Construction-Generated DPM for the Make-Ready Projects and CUP Expansion (Excluding the SMUD Component) 3.2-28
Table 3.2-8. Estimated Maximum Cancer and Hazard Risks from Operations-Generated TAC under Existing and Project Conditions 3.2-29
Table 3.7-1. Sacramento Campus Greenhouse Gas Emissions Sources by Scope[a] 3.7-3
Table 3.7-2. Global, National, State, and Local GHG Emissions Inventories 3.7-5
Table 3.7-3. Estimated GHG Emissions for Implementation of the Project 3.7-10
Table 3.11-1. Federal Transit Administration Ground-borne Vibration Impact Criteria 3.11-2
Table 3.11-2. Caltrans Vibration Guidelines for Potential Damage to Structures 3.11-2
Table 3.11-3. Caltrans Guidelines for Vibration Annoyance Potential 3.11-3
Table 3.11-4. General Plan Exterior Noise Compatibility Standards for Various Land Uses 3.11-4
Table 3.11-5. General Plan Exterior Incremental Noise Impact Standards for Noise-Sensitive Uses (dBA) 3.11-5
Table 3.11-6. City of Sacramento Noise Ordinance Cumulative Intrusive Sound Limits 3.11-6
Table 3.11-7. 2010 LRDP Long-Term Noise Measurement Data Summary 3.11-8
Table 3.11-8. 2010 LRDP Short-Term Noise Measurement Data Summary 3.11-9
Table 3.11-9. Long-Term Noise Measurement Data Summary from Other UCD Sacramento Campus Projects 3.11-10
Table 3.11-10. Construction Noise Levels at 100 feet from the Reasonable Worst-Case Phase 3.11-14
Table 3.11-11. Construction Noise Levels at the Nearest Sensitive Receptors from the Reasonable Worst-Case Phase 3.11-14
Table 3.11-12. Vibration Levels in VdB of Project Construction Equipment 3.11-24

Table 3.11-13. Peak Particle Velocity Vibration Levels for Construction Equipment 3.11-26
Table 4-1. Comparison of the Environmental Impacts of the Alternatives in Relation to CUP Expansion Project 4-13

Figures

Figure 2-1. Project Vicinity 2-5
Figure 2-2. Project Location 2-6
Figure 2-3. Proposed Site Plan 2-8
Figure 2-4. Transportation Improvements 2-9
Figure 2-5a. SMUD Feeder Route 1 2-10
Figure 2-5b. SMUD Feeder Route 2 2-11
Figure 2-6. CUP Expansion Utilities 2-12
Figure 3.1-1. Key Viewpoints 3.1-5
Figure 3.1-2. Viewpoint 1: Photos of Existing CUP Looking South from 2nd Ave 3.1-6
Figure 3.1-3a. Viewpoint 2: Photos of Existing CUP Looking Northeast from 49th Street 3.1-7
Figure 3.1-3a. Viewpoint 2: Photos of Existing CUP Looking Northeast from 49th Street 3.1-8
Figure 3.2-1. Air Quality Sensitive Receptors within 1,000 Feet of the CUP 3.2-5
Figure 3.10-1. Existing LRDP Land Use 3.10-3
Figure 3.10-2. Proposed LRDP Land Use 3.10-4

Acronyms and Abbreviations

2020 LRDP Update	2020 Long Range Development Plan Update
2020 LRDP Update SEIR	2020 Long Range Development Plan Update Supplemental EIR
2020 Physical Design Framework	UC Davis Sacramento Campus 2020 Physical Design Framework
AB	Assembly Bill
ABS	acrylonitrile butadiene styrene
ACAPCD	Amador County Air Pollution Control District
ACMs	asbestos-containing materials
afy	acre-feet per year
AREAPOLY	area source
Basin Plan	Region 2 Water Quality Control Plan
BMPs	best management practices
BPIP PRIME	Building Profile Input Program, PRIME
CA Tower	California Hospital Tower Project
CAA	Clean Air Act
CAAQS	California ambient air quality standards
Cal OSHA	California Occupational Safety and Health Administration
CalARP	California Accidental Release Prevention
CalEEMod	California Emissions Estimator Model
Cal-EPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CAP	climate action plan
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
Central Energy Plant	Central Cogeneration Plant
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations

CNI	Carbon Neutrality Initiative
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Construction General Permit	NPDES General Permit for Construction Activities
Cordova Park Project	Cordova Park Underground Cable Replacement Project
CRHR	California Register of Historic Resources
CUP	Central Utility Plant
CUPA	certified uniform program agency
CWA	Clean Water Act
Design Guidelines	UC Davis Health Campus Design Guidelines
DPM	diesel particulate matter
Draft Supplemental EIR	draft supplemental environmental impact report
DSH	diameter measured at standard height
EIR	Environmental Impact Report
EO	executive order
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRMs	Flood Insurance Rate Maps
Friant Ranch Decision	*Sierra Club v. County of Fresno*
Friant Ranch Project	Friant Ranch Specific Plan
FSSB	Facility Support Services Building
FTA	Federal Transit Administration
GHG	greenhouse gas
GSA	Groundwater Sustainability Agencies
GSPs	groundwater sustainability plans
HI	hazard index
HOV	high-occupancy vehicle
HPI	Healthy Places Index
HRA	human health risk assessment
HSWA	Hazardous and Solid Waste Amendments

IBC	International Building Code
K	Kelvin
kV	kilovolt
kWh	kilowatt-hours
lb/day	pounds per day
LEED	Leadership in Energy and Environmental Design
LINEAREA	line/area source
L_{max}	A-weighted maximum sound levels
LRDP	Long Range Development Plan
LUST	leaking underground storage tank
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
mgpy	million gallons per year
MLD	Most Likely Descendant
MMRP	Mitigation Monitoring and Reporting Program
mph	miles per hour
MS4	Municipal Separate Storm Sewer Systems
MTP/SCS	*2020 Metropolitan Transportation Plan/Sustainable Communities Strategy*
MVA	megavolt-ampere
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NEC	No Exposure Certification
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act of 1966
NOA	naturally occurring asbestos
NOI	notice of intent
NOP	notice of preparation
NOx	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration

PCE	perchloroethylene
PG&E	Pacific Gas and Electric Company
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
POINT	point sources
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PRC	Public Resources Code
PS6	Parking Structure 6
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
RD	Reclamation District
Regents	Board of Regents of the University of California
Region-wide Permit	National Pollutant Discharge Elimination System Permit and Waste Discharge Requirements General Permit for Discharges from Municipal Separate Storm Sewer Systems
RMP	risk management plan
ROG	reactive organic gases
RPS	Renewables Portfolio Standard
RWQCBs	Regional Water Quality Control Boards
SACOG	Sacramento Area Council of Governments
SacRT	Sacramento Regional Transit
SAFCA	Sacramento Area Flood Control Agency
SASC	Sacramento Ambulatory Surgery Center
SB	Senate Bill
SCGA	Sacramento Central Groundwater Authority
school	Language Academy of Sacramento
SCUSD	Sacramento City Unified School District
SFD	Sacramento Fire Department
SFNA	Sacramento Federal Nonattainment Area
SGMA	Sustainable Groundwater Management Act of 2014
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
Sound Transmission Class	STC

SPD	City of Sacramento Police Department
SQIPs	stormwater quality improvement programs
SR	State Route
SSWD	Sacramento Suburban Water District
State	State of California
State Water Board	State Water Resources Control Board
Sustainable Practices Policy	University of California Policy on Sustainable Practices
SVAB	Sacramento Valley Air Basin
SWMPs	stormwater management plans
SWPPP	stormwater pollution prevention plan
TAC	toxic air contaminant
Technical Advisory	*Technical Advisory on Evaluating Transportation Impacts in CEQA*
TMDLs	total maximum daily loads
TMP	Traffic Management Plan
tpd	tons per day
tpy	tons per year
UC	University of California
UC Davis or University	University of California Davis
UC or University	University of California
US 50	U.S. Highway 50
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
VOC	volatile organic compound

ES.1 Introduction

This executive summary is provided in accordance with Section 15123 of the California Environmental Quality Act (CEQA) Guidelines. It contains an overview of the project-level analysis of the Central Utility Plant (CUP) Expansion Project, which would be located on the University of California (UC or University), Davis Sacramento Campus. As stated in CEQA Guidelines Section 15123(a), "[a]n EIR shall contain a brief summary of the proposed actions and its consequences. The language of the summary should be as clear and simple as reasonably practical." CEQA Guidelines Section 15123(b) states that "[t]he summary shall identify: 1) each significant effect with proposed mitigation measures and alternatives that would reduce or avoid that effect; 2) areas of controversy known to the Lead Agency, including issues raised by agencies and the public; and 3) issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects." Accordingly, this summary includes a brief synopsis of the CUP Expansion Project and project alternatives, environmental impacts and mitigation measures, areas of known controversy, and issues to be resolved during environmental review. Table ES-1 presents the summary of potential environmental impacts, their level of significance without mitigation measures, the proposed mitigation measures, and the levels of significance of those impacts following the implementation of mitigation measures.

ES.2 Summary Project Description

The CUP Expansion Project would be located within the UC Davis Sacramento Campus, which is bounded by V Street on the north, Stockton Boulevard on the west, Broadway to the south, and a residential neighborhood to the east. The existing CUP is bounded on the north and east by 2nd Avenue, on the south by 49th Street, and on the west by the Facilities Support Services Building (FSSB). Land uses surrounding the project site are residential, with neighborhoods composed of single-family homes but some commercial and urban development as well.

Components of the CUP Expansion Project are as follows:

Make-Ready Projects—To prepare for construction and operation of the project components described below, several make-ready projects would be required prior to initiation of the CUP Expansion Project. These include site preparation, an extension of infrastructure to the site, transportation improvements related to Parking Structure 6 (PS6) access, removal of the existing Waste Management Facility, and partial removal of the Facilities Support Services Building (FSSB), including foundation work for the future CUP Annex.

CUP Expansion Project Construction and Operation—After make-ready work is complete, construction at the existing CUP and the expansion site would include remodeling the control room, including Americans with Disabilities Act improvements; routing new underground utilities for electricity and diesel fuel; and demolishing unused CUP yard walls to complete new roadway connections, pavement work, and landscaping. The CUP Annex would be constructed, new diesel tanks would be installed in the existing CUP yard, and new transformers and switchgear would be installed in the electrical yard. A new replacement well and supporting structure would be installed

and connected to the existing water infrastructure, and a bioswale would be constructed in the major campus open space to reduce stormwater runoff.

New SMUD Feeder for Normal Power—UC Davis Health plans to eliminate dependence on gas and steam turbines for primary energy production and transition to electrical power from SMUD. To accomplish this, the existing normal-power service would need to be expanded. This project component would include construction of new infrastructure for a 116/21.9 kV, 40 MVA transformer and installation of a 40 MVA underground transmission line between SMUD's East City Substation and the new electrical service yard at the CUP. This installation would also require new 21 kV, 1,200-ampere switchgear; new parallel conductors; new manholes; and a new circuit breaker at the CUP. This new service would be from SMUD's East City Substation and delivered to campus from one of two potential routes, which are being evaluated in this EIR.

- Route 1: The transmission line would extend from SMUD's East City Substation at 6180 Folsom Blvd in Sacramento, then continue east along the railroad tracks and south on 65th Street to Broadway. The line would then run along Broadway west to 59th Street and north to the new electrical service yard at the CUP.
- Route 2: The transmission line would extend from SMUD's East City Substation at 6180 Folsom Blvd in Sacramento, then continue east along the railroad tracks and south on 65th Street to T Street. The line would then continue west along T Street, south at 57th Street, and west along 2nd Avenue to the new electrical service yard at the CUP.

ES.3 Objectives of the CUP Expansion Project

UC Davis has identified the following objectives for the proposed CUP Expansion Project:

- Increase the resiliency of utilities in the event of a utility outage to maintain care for the community in the Sacramento region.
- Comply with Health-Care Access and Information (HCAI) standards and requirements for health-care facilities.
- Provide the utility load needed for campus growth, including the California Hospital Tower and 48X Complex.
- Accommodate campus growth through 2035.
- Further campus compliance with the UC Sustainable Practices Policy, including initiation of development of a more efficient operating utility plant to reduce GHGs and set the Sacramento Campus on a path to carbon-free operations.
- Demolish outdated spaces to achieve seismic safety and remove buildings that cannot be operated efficiently or renovated.

ES.4 Summary of Environmental Impacts and Mitigation Measures

Pursuant to CEQA Guidelines Section 15382, a significant effect on the environment is defined as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the

area affected by the plan, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance." Chapter 3 of this EIR describes in detail the significant environmental impacts that would result from implementation of the CUP Expansion Project. Table ES-1 summarizes the environmental impacts and mitigation measures discussed in these chapters. Chapters 4 and 5 provide a discussion of cumulative impacts and other CEQA considerations, respectively.

ES.5 Significant and Unavoidable Environmental Impacts

Public Resources Code (PRC) Section 21100(b)(2)(A) provides that an EIR shall include a detailed statement setting forth "in a separate section: any significant effect on the environment that cannot be avoided if the project is implemented." Accordingly, this section provides a summary of the significant environmental impacts of the project that cannot be mitigated to a less-than-significant level.

Chapter 3, *Existing Environmental Setting, Impacts, and Mitigation*, describes the potential environmental impacts of the CUP Expansion Project and recommends various mitigation measures to reduce impacts to the extent feasible. After implementation of the recommended mitigation measures, most of the impacts associated with development of the CUP Expansion Project would be reduced to a less-than-significant level. However, implementation of the CUP Expansion Project would result in one significant and unavoidable environmental impact related to construction noise.

The following impact has been identified as significant and unavoidable with implementation of all feasible mitigation measures:

- Impact LRDP-NOI-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from construction activities in excess of applicable standards

ES.6 Alternatives to the CUP Expansion Project

CEQA Guidelines Section 15126.6 provides that all EIRs include a comparative evaluation of a proposed project, with alternatives to the project that are capable of attaining most of the project's basic objectives but avoiding or substantially lessening significant effects of the project. CEQA requires an evaluation of a "range of reasonable" alternatives, including the "no project" alternative. The following alternatives are under consideration for the CUP Expansion Project.

- **Alternative 1: No Project.** Under the No-Project Alternative, the CUP would continue to provide all of the campus' normal power, chilled and hot water for heating and cooling, and process steam to most campus buildings, which use natural gas provided by Pacific Gas and Electric (PG&E). Emergency power would continue to be provided by diesel generators at the CUP. The analysis here assumes the continuation of existing conditions at the CUP and that adding capacity, as described above, would not add equipment to the site or increase operations or staffing at the site.
- **Alternative 2: New Non-Clinical Satellite Heat Recovery Plant (Continued Cogeneration with Existing Plant).** Under Alternative 2, the existing combined cooling, heat, and power (CCHP) plant gas-turbine, heat recovery steam generator, and steam turbine would continue existing operations

without a load increase; a new satellite all-electric plant would be constructed in the campus core area, a substantial distance north of the existing CUP. This satellite plant would serve existing and new non-medically related buildings, such as teaching facilities, laboratories, and administrative office buildings, while the existing CCHP plant would continue to serve the greater campus. The loads on the existing CCHP plant would increase, and power for the new satellite plant would be provided by a new transmission line from SMUD.

Section 15126.6 of the CEQA Guidelines states that an EIR should identify the "environmentally superior" alternative. If "the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

As described in Chapter 4, *Alternatives*, Alternative 1, the No-Project Alternative, would reduce impacts related to construction noise but result in greater impacts related to air quality, energy, and GHG emissions because the project benefits would not be achieved, and the University would not achieve the goal of reducing natural gas combustion by 80 percent. Therefore, the No-Project Alternative would not achieve the identified project objectives and would result in conflicts with the UC Sustainable Practices Policy.

Alternative 2, New Non-Clinical Satellite Heat Recovery Plant (Continued Cogeneration with Existing Plant) would reduce construction noise impacts at the existing on-campus sensitive receptor to a less-than-significant level. Although this alternative could result in greater operational noise impacts, it is anticipated that the impacts could be reduced by noise-reduction mitigation. The alternative would not reduce the significant and unavoidable construction noise impacts associated with the SMUD facilities. Although Alternative 2 would reduce the construction noise impact of the proposed project, it would increase impacts related to air quality, energy, and GHG emissions and have slightly greater impacts on other resources because Alternative 2 would have a larger project footprint.

Because Alternative 2 would reduce a significant unavoidable impact of the proposed project while reducing GHG impacts compared to the No-Project Alternative, Alternative 2 is the environmentally superior alternative.

ES.7 Areas of Controversy

Pursuant to CEQA Guidelines Section 15123(b)(2), a lead agency is required to include in the EIR areas of controversy raised by agencies and the public during the public scoping process. Issues of concern and issue areas raised during the scoping process include noise, transportation, air quality/GHGs, and utilities.

ES.8 Mitigation Monitoring and Reporting Program

CEQA and the CEQA Guidelines (PRC Section 21081.6 and CEQA Guidelines Sections 15091[d] and 15097) require public agencies "to adopt a reporting and monitoring program for changes to the project which it has adopted or made a condition of project approval to mitigate or avoid significant effects on the environment." A Mitigation Monitoring and Reporting Program (MMRP) is required and therefore has been prepared for the CUP Expansion Project because the EIR identified potential significant adverse impacts related to project implementation. Mitigation measures have been

identified to reduce those impacts. The MMRP, as presented in Table ES-2, has been prepared to ensure that all required mitigation measures are implemented and completed in a satisfactory manner before and during project construction, as well as operation, as applicable. Unless otherwise specified, UC Davis is responsible for taking all actions necessary to implement the mitigation measures under its jurisdiction, according to the specifications provided for each measure, and demonstrating that the action has been successfully completed. UC Davis, at its discretion, may delegate implementation responsibility or portions thereof to a licensed contractor or other designated agent. PRC Section 21081.6 requires the lead agency to identify the "custodian of documents and other material" that constitutes the "record of proceedings" upon which the action on the project was based. The UC Davis Office of Campus Planning and Environmental Stewardship, or designee, is the custodian of such documents for the CUP Expansion Project.

Table ES-1. Summary of Impacts and Mitigation Measures

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Aesthetics			
Impact AES-1: Conflict with zoning or other regulations governing scenic quality in urbanized areas	**LTS**		
Impact AES-2: Introduction of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area	**S**	**Mitigation Measure LRDP-AES-2a: Apply Design Measures to Building Exteriors** Design for specific projects will provide for the use of textured, nonreflective exterior surfaces and nonreflective glass. **Mitigation Measure LRDP-AES-2b: Utilize Directional Lighting Methods** Except as provided in Mitigation Measure LRDP AES-4c, all new outdoor lighting will use directional lighting methods with shielded and cutoff light fixtures to minimize glare and upward-directed lighting. **Mitigation Measure LRDP-AES-2c: Review Lighting, Landscape, and Architectural Features Prior to Installation** Non-cutoff, unshielded lighting fixtures used to enhance nighttime views of walking paths, specific landscape features, or specific architectural features will be reviewed by the Sacramento Campus Facilities Design and Construction staff prior to installation to ensure that the minimum amount of required lighting is proposed to achieve the desired nighttime emphasis, and the proposed illumination creates no adverse effect on nighttime views. **Mitigation Measure LRDP-AES-2d: Implement Updated Lighting Design** The University will implement the use of the specific lighting design and equipment designed to reduce light spill and glare when older lighting fixtures and designs are replaced over time	**LTS**
Air Quality			
Impact AQ-1: Conflict with or obstruction of implementation of the applicable air quality plan (less than significant)	**LTS**		
Impact AQ-2: Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is a nonattainment area for an	**S**	**Mitigation Measure LRDP-AQ-2a: Reduce construction-generated fugitive dust** Land use development projects as part of the implementation of the 2020 LRDP Update will require all construction contractors to implement the following measures to reduce construction-generated fugitive dust. Control of fugitive dust is required per SMAQMD Rule	**LTS**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
applicable federal or state ambient air quality standard		403 and enforced by SMAQMD staff. The list of required measures was informed by SMAQMD's basic and enhanced construction emission control practices. • Water exposed soil with adequate frequency to prevent fugitive dust and particulates from leaving the project site. However, do not overwater to the extent that sediment flows off the site. Exposed surfaces include, but are not limited to, soil piles, graded areas, and unpaved parking areas. • Suspend excavation, grading, and/or demolition activity when sustained wind speeds exceed 25 miles per hour (mph). • Install wind breaks (e.g., trees, solid fencing) on the average dominant windward side(s) of construction areas. For purposes of implementation, chain-link fencing with added landscape mesh fabric adequately qualifies as solid fencing. • For dust control in disturbed but inactive construction areas, apply soil stabilization measures adequate to mitigate airborne particulates as soon as possible. • Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. • Treat site accesses from the paved road with a 6- to 12-inch layer of wood chips, mulch, gravel, or other approved method to reduce generation of road dust and road dust carryout onto public roads. • Cover or maintain at least 2 feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered. • Establish a 15 mph speed limit for vehicles driving on unpaved portions of project construction sites. • Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The phone number of the SMAQMD will also be visible to ensure compliance. UC Davis will ensure that the implementation of this mitigation measure is consistent with the UC Davis stormwater program and does not result in offsite runoff as a result of watering for dust control purposes. **Mitigation Measure LRDP-AQ-2b: Reduce construction-generated emissions from equipment and vehicle exhaust**	

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Land use development projects as part of the implementation of the 2020 LRDP Update will require all construction contractors to implement the following measures to reduce construction-generated emissions from equipment and vehicle exhaust. The list of required measures was informed by SMAQMD's basic and enhanced construction emission control practices. • For all development except Aggie Square Phase I, use construction equipment with engines meeting EPA Tier 3 or better emission standards prior to 2025 and EPA Tier 4 Final or better emission standards beginning in 2025. For Aggie Square Phase I, all engines must be EPA certified Tier 4 Final or better, regardless of construction year. Equipment requirements may be waived by UC Davis but only under the following unusual circumstances: if use of a particular piece of off-road equipment meeting Tier 4 Final standards or Tier 3 standards is not technically feasible, or the equipment is not commercially available, or there is a compelling emergency requiring the use of off-road equipment that does not meet the equipment requirements above. If UC Davis grants the waiver, the contractor will use the next-cleanest piece of off-road equipment available in the following order: Tier 4 Interim, Tier 3, and then Tier 2 engines. • Use renewable diesel fuel in all heavy-duty, off-road diesel-fueled equipment. Renewable diesel must meet the most recent ASTM D975 specification for ultra low-sulfur diesel and have a carbon intensity no greater than 50 percent of the diesel with the lowest carbon intensity among petroleum diesel fuels sold in California. • Use a model year 2010 or newer engine in all diesel on-road trucks used to haul construction materials. • Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (California Code of Regulations [CCR], Title 13, Sections 2449[d][3] and 2485). Provide clear signage that posts this requirement for workers at the entrances to the site. • Provide current certificate(s) of compliance with CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation (CCR, Title 13, Sections 2449 and 2449.1). • Maintain all construction equipment in proper working condition, according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated. **Mitigation Measure LRDP-AQ-2c: Reduce evaporative emissions during architectural coatings**	

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Land use development projects as part of implementation of the 2020 LRDP Update will require all construction contractors to use architectural coatings with no or a low level of solids content (i.e., no or a low level of volatile organic compounds [VOCs]). The maximum VOC content will be 50 grams per liter. **Mitigation Measure LRDP-AQ-2d: Offset construction-generated NO_X emissions in excess of SMAQMD's threshold of significance** Construction-generated emissions of NO_X would exceed the SMAQMD's threshold of significance during 2020, 2022, and 2024. Therefore, UC Davis will pay a mitigation fee in the amount of $4,558 and an administrative fee in the amount of $228 to SMAQMD to reduce the project impacts from construction NO_X emissions to a less-than-significant level. This fee will be used to fund emissions reduction projects within the SVAB. The types of projects that have been used in the past to achieve such reductions include electrification of stationary internal-combustion engines (such as agricultural irrigations pumps); replacement of old trucks with newer, cleaner, more efficient trucks; and a host of other stationary- and mobile-source emissions-reducing projects. The fee is based on an offset cost of $30,000 per ton of NO_X and the total quantity of NO_X emissions in excess of SMAQMD's NO_X threshold (304 pounds, or 0.15 ton, based on the daily exceedances in 2020, 2022, and 2024). The administrative fee is 5 percent of the fee. UC Davis will pay the mitigation and administrative fees in full prior to issuing a demolition or grading permit for the first project developed under the 2020 LRDP Update. For construction projects under the 2020 LRDP Update occurring during 2020, 2022, and 2024, construction contractors will provide annual construction activity monitoring data to estimate actual construction emissions. UC Davis will submit the annual construction activity monitoring data and an estimate of actual annual NO_X emissions to SMAQMD for review by February 1 of each year for the prior construction year. The annual report will reconcile paid fees for the prior year relative to actual emissions. If more emissions were generated than covered by the fees paid, UC Davis will submit payment for the deficient amount, based on an offset cost of $30,000 per ton of NO_X. If more fees were paid than needed for the emissions generated, SMAQMD will either issue UC Davis a refund for the surplus or a credit that can be applied to future fee payments. An alternative payment plan may be negotiated by UC Davis, based on the timing of construction phases that are expected to exceed the SMAQMD's threshold of significance. Any	

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		alternative payment plan must be acceptable to SMAQMD and agreed upon in writing prior to issuance of a demolition or grading permit by UC Davis. In coordination with SMAQMD, UC Davis, or its designee, may reanalyze construction NO_X emissions from the 2020 LRDP Update prior to starting construction to update the required mitigation and administrative fees. The analysis must be conducted using the SMAQMD-approved emissions model(s) and the fee rates published at the time of reanalysis. The analysis may include onsite measures to reduce construction emissions if deemed feasible by UC Davis. All onsite measures assumed in the analysis must be included in the construction contracts and be enforceable by UC Davis. **Mitigation Measure AQ-2: Reanalyze project emissions and offset construction-generated NOX emissions in excess of SMAQMD's threshold of significance** If the SMUD Component will be constructed in 2025, construction-generated emissions of NOX may exceed the SMAQMD's threshold of significance during that year. In coordination with SMAQMD, UC Davis, or its designee, will reanalyze construction NOX emissions in 2025 prior to starting construction of the SMUD Component. The analysis must be conducted using SMAQMD-approved emissions model(s) and account for all project construction activity scheduled to occur in 2025 (i.e., SMUD Component, make-ready projects, CUP expansion). The analysis may include onsite measures to reduce construction emissions if deemed feasible by UC Davis. All onsite measures assumed in the analysis must be included in the construction contracts and be enforceable by UC Davis. The required mitigation fee amount will be calculated based on the amount of quantified NOx emissions in excess of SMAQMD's threshold of 85 pounds per day and the fee rates published at the time of reanalysis. The fee will be used to fund emissions reduction projects within the SVAB. The types of projects that have been used in the past to achieve such reductions include electrification of stationary internal combustion engines (such as agricultural irrigations pumps); replacing old trucks with new, cleaner, more efficient trucks; and a host of other stationary and mobile source emissions-reducing projects. UC Davis will pay the SMAQMD mitigation and administration fees in full prior to construction of the SMUD component. For construction occurring during 2025, construction contractors will provide annual construction activity monitoring data to estimate actual construction emissions. UC Davis will submit the annual construction activity monitoring data and an estimate of actual annual NOx emissions to SMAQMD for review by February 1, 2026. The annual report will reconcile paid fees, if any, for 2025 relative to actual emissions. If more	

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		emissions were generated than fees paid, UC Davis will submit payment for the deficient amount based on an offset cost per ton of NOX. If more fees were paid than emissions generated, SMAQMD will issue UC Davis a refund for the surplus.	
Impact AQ-3: Exposure of sensitive receptors to substantial pollutant concentrations	**S**	**Mitigation Measure LRDP-AQ-2a: Reduce construction-generated fugitive dust** Refer to measure description under Impact AQ-2. **Mitigation Measure LRDP-AQ-2b: Reduce construction-generated emissions from equipment and vehicle exhaust** Refer to measure description under Impact AQ-2. **Mitigation Measure LRDP-AQ-2c: Reduce evaporative emissions during architectural coatings** Refer to measure description under Impact AQ-2. **Mitigation Measure LRDP-AQ-2d: Offset construction-generated NO_X emissions in excess of SMAQMD's threshold of significance** Refer to measure description under Impact AQ-2. **construction-generated NOX emissions in excess of SMAQMD's threshold of significance** **If the SMUD Component will be constructed in 2025, construction-generated emissions** Refer to measure description under Impact AQ-2. **Mitigation Measure LRDP-AQ-3b: Reduce receptor exposure to operations generated toxic air contaminants** UC Davis will require all diesel emergency generators on the Sacramento Campus to use renewable diesel fuel. Renewable diesel must meet the most recent ASTM D975 specification for ultra low-sulfur diesel and have a carbon intensity no greater than 50 percent of diesel with the lowest carbon intensity among petroleum diesel fuels sold in California. All diesel generators must be transitioned to renewable diesel fuel no later than December 31, 2039. UC Davis will then employ a tiered approach to further reduce sensitive receptor exposure to toxic air contaminants generated by the Sacramento Campus Central Energy Plant. The selected control strategy must be implemented prior to December 31, 2039. The approach will be taken in the following way: • Replace at least three of the existing Tier 0 generators with engines meeting EPA Tier 4 Final or better emission standards. If the engine cannot be replaced, then	**LTS**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		• Require at least three of the existing Tier 0 generators operate with the most effective California Air Resources Board Verified Diesel Emissions Controls (VDECs) available for the engine type (effectively level 3). If the engine cannot be retrofitted with VDECs, then • Require all existing Tier 0 generators without VDECs to increase the stack height by at least 20 feet.	
Impact AQ-4: Other emissions (such as those leading to odors) adversely affecting a substantial number of people (less than significant)	**LTS**		
Biological Resources			
Impact BIO-1: Potential adverse impacts on valley elderberry longhorn beetle	**LTS**		
Impact BIO-2: Disturbance of vegetation-nesting migratory birds and raptors, including Swainson's hawk and white-tailed kite	**S**	**Mitigation Measure LRDP-BIO-2: Conduct preconstruction surveys for nesting migratory birds and raptors, including special-status species, and establish protective buffers** For any projects implemented under the 2020 LRDP Update that would require vegetation removal (i.e., trees, shrubs, and ruderal vegetation) or would result in construction disturbances in the vicinity of vegetated areas, the following measures will be implemented prior to initiation of construction to avoid and minimize impacts on Swainson's hawk, white-tailed kite, and other vegetation-nesting migratory birds and raptors and avoid violation of the MBTA, CESA, and California Fish and Game Code Sections 3503, 3503.5, and 3511. • For construction activities that occur during the nesting season for migratory birds and raptors, between February 15 and August 31, the University will ensure that a qualified wildlife biologist familiar with the nesting behavior of bird species that occur in the plan area to conduct a preconstruction nesting bird survey. The nesting bird surveys will be conducted no more than 14 days prior to vegetation removal or construction disturbance activities near nesting habitat. The survey will include a search of all trees and shrubs and ruderal areas that provide suitable nesting habitat for birds and raptors within the construction disturbance area. In addition, a 600-foot area around the construction area will be surveyed for nesting raptors, and a 100-foot area around the construction area will be surveyed for songbirds.	**LTS**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		• If no special-status raptor species (i.e., Swainson's hawk or white-tailed kite) or active bird or raptor nests are detected during the preconstruction surveys, then no additional measures are required. If an active nest is found in the survey area, a no-disturbance buffer will be established to avoid disturbance or destruction of the nest site until the end of the breeding season (generally August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the construction area (this date varies by species). The extent of these buffers will be determined by a qualified biologist in coordination with any applicable agencies (as determined by species) and will depend on the level of noise or construction disturbance taking place, the line-of-sight between the nest and the disturbance, ambient levels of noise and other non-project disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species; however, a minimum of 50 feet for songbirds and 300 feet for raptors is typical. In developed habitats, buffer areas may be adjusted based on presence of existing barriers.	
Impact BIO-3: Disturbance of structure-nesting migratory birds, including purple martin	**S**	**Mitigation Measure LRDP-BIO-3: Modify existing structures during the non-breeding season for purple martin and other structure-nesting migratory birds or implement exclusion measures to deter nesting** For any projects implemented under the 2020 LRDP Update that would modify or demolish any existing building structures, the following measures will be implemented prior to initiation of construction to avoid and minimize impacts on purple martins and other structure-nesting migratory birds and avoid violation of the MBTA and California Fish and Game Code Section 3503. • Conduct building demolition and modification activities during the non-breeding season for structure-nesting migratory birds (generally September 1 through January 31). If this is not possible, the University will implement the following avoidance measures: • Prior to the start of each phase of demolition/construction that is anticipated to occur during the migratory bird breeding season (generally February through August), the University will retain a qualified wildlife biologist to thoroughly inspect structures that would be modified or disturbed to locate remnant bird nests or areas such as drain holes or crevices that could be used as nesting areas by migratory birds such as purple martins. It is preferable to perform this survey in the non-breeding season (September 1 through January 31) so that, if nests are found and are determined to be inactive, they may be removed.	**LTS**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		• After inactive nests are removed and prior to construction that would occur between February 1 and August 31, known or potential nesting areas on or within the building structure to be modified or demolished will be covered with a suitable exclusion material that will prevent birds from nesting (i.e., 0.5- to 0.75-inch mesh netting, plastic tarp, or other suitable material safe for wildlife). Portions of the existing structures containing drain holes or crevices that would be modified or disturbed also will be covered or filled with suitable material to prevent nesting (i.e., fiberglass insulation, foam padding, and polyvinyl chloride [PVC]/acrylonitrile butadiene styrene [ABS] caps). The University will ensure that a qualified wildlife management specialist experienced with installation of bird exclusion materials will ensure that exclusion devices are properly installed and will avoid inadvertent entrapment of migratory birds. All exclusion devices will be installed before February 1 and will be monitored throughout the breeding season (typically several times a week). The exclusion material will be anchored so that birds cannot attach their nests to the structures through gaps in a net. • Exclusion devices for migratory birds will be installed consistent with bat exclusion measures and in a manner that does not entrap day-roosting bats. • If exclusion material is not installed on structures prior to February 1 and migratory birds colonize a structure, removal or modification to that portion of the structure may not occur until after August 31 or until a qualified biologist has determined that the young have fledged and the nest is no longer in use. • If surveys determine that no active bird nests are present within existing structures to be modified or demolished and appropriate steps are taken to prevent migratory birds from constructing new nests, as described in the preceding measures, work can proceed at any time of the year.	
Impact BIO-4: Disturbance of structure-roosting bats	**S**	**Mitigation Measure LRDP-BIO-4: Conduct pre-construction surveys for roosting bats and implement protection measures** Baseline data about how bats may use structures in the plan area, their individual numbers, or how they vary seasonally are not available. Daily and seasonal variations in habitat use by bats is common. To obtain the highest likelihood of detection, the following pre-construction bat surveys will be conducted within the construction area prior to modification or demolition of existing building structures. If surveys determine that bats are roosting in the construction area, the University will implement the following protective measures. Conduct Pre-Construction Surveys at Structures	**LTS**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		• Before work begins on any building or structure, qualified biologists will conduct a daytime search for bat signs and evening emergence surveys to determine whether the structure is being used as a roost. Biologists conducting daytime surveys will listen for audible bat calls and will use the naked eye, binoculars, and a high-powered spotlight to inspect crevices, drain holes, and other visible features that could house bats. Building surfaces and the ground around the structure will be surveyed for bat signs, such as guano, staining, and prey remains. Surveys will occur no earlier than two weeks prior to the construction start-date. • Qualified biologists also will conduct evening emergence surveys at structures that contain suitable roosting areas. The surveys will consist of at least one biologist stationed near potential entry and exit points of the structure watching for emerging bats from a half hour before sunset to 1–2 hours after sunset for a minimum of 2 nights at each survey location within the season that construction would be taking place. Surveys may take place over several nights to fully cover the extent of structure work. All emergence surveys will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted). Survey methodology may be supplemented as new research identifies advanced survey techniques and equipment that would aid in bat detections. Acoustic detectors will be used during emergence surveys to obtain data on bat species present in the survey area at the time of detection. • If a building or structure proposed for modification or demolition is identified as supporting an active bat roost, additional surveys may be required to determine how the structure is used by bats—whether it is used as a night roost, maternity roost, migration stopover, or for hibernation. Identify Protective Measures for Bats Using Structures • If it is determined that bats are using building structures within or adjacent to the construction area as roost sites, the University will coordinate with CDFW to identify protective measures to avoid and minimize impacts on roosting bats based on the type of roost and timing of activities. These measures could include the following actions. • If a non-maternity roost is located within a structure that would be modified or disturbed in a manner that would expose the roost, bats will be excluded from the structure by a qualified wildlife management specialist working with a bat biologist. An exclusion plan will be developed in coordination with CDFW that identifies the type of exclusion material/devices to be used, the location and method for installing the devices, and	

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		monitoring schedule for checking the effectiveness of the devices. Exclusion devices will be installed between September 15 and October 31 to avoid affecting maternal and hibernating bat roosts and will take place during weather and temperature conditions conducive to bat activity. Because bats are expected to tolerate temporary construction noise and vibrations, bats will not be excluded from structures if no direct impacts on the roost are anticipated. • An alternative to installing exclusion devices would be to make structural changes to a known roost proposed for removal to create conditions in the roost that are undesirable to roosting bats and encourage the bats to leave on their own (e.g., open additional portals so that the temperature, wind, light, and precipitation regime in the roost change). Structural changes to the roost will be authorized by CDFW and will be performed during the appropriate exclusion timing (listed above) to avoid harming bats. • If a maternity roost is located, whether solitary or colonial, that roost will remain undisturbed until September 15 or until a qualified biologist has determined that the roost is no longer active.	
Impact BIO-5: Conflict with a local policy or ordinance protecting biological resources, such as a tree preservation policy or ordinance	**S**	**Mitigation Measure BIO-5: Tree Protection** Prior to site disturbance, SMUD shall provide a plan of all tree work to the City. A Certified Arborist shall approve all work plans prior to submittal to the City. For trees that will be preserved on site during project construction, the following guidelines are recommended to ensure the long-term survival and stability of the trees. • Educate Workers: Educate all workers on site about tree protection guidelines and requirements prior to construction. • Establish a Tree Protection Zone: Establish a tree protection zone (TPZ) around any tree or group of trees designated for retention. The TPZ should at minimum be equal to 1.5 times the radius of the dripline. The TPZ may be adjusted on a case-by-case basis after consultation with a Certified Arborist. • Install Fencing and Signage: Install fencing around the TPZ of all trees or groups of trees designated for retention. The fencing should remain in place for the duration of construction activities. Post appropriate signage to help convey the importance of the TPZ to workers. • Prohibit Construction Activities within the TPZ: Prohibit construction-related activities, including grading, trenching, construction, demolition, or other work, within the TPZ. No	**LTS**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		heavy equipment or machinery should be operated within the TPZ. No construction materials, equipment, machinery, or other supplies should be stored within the TPZ. Vehicle and foot traffic should not be permitted within the TPZ. No wires or signs should be attached to any trees designated for retention. • • Selected Trees: Prune selected trees to provide necessary clearance during construction and to remove any defective limbs or other tree parts that may pose a failure risk. All pruning should be completed by a Certified Arborist or Tree Worker and adhere to the Tree Pruning Guidelines of the International Society of Arboriculture. • Monitor Trees and TPZs: Monitor the integrity of the TPZs and the health of the trees designated for retention regularly throughout the construction process. A Certified Arborist should monitor the health and condition of the protected trees and, if necessary, recommend additional mitigations and appropriate actions. This could include the monitoring of trees adjacent to project facilities to determine if construction activities (including the removal of nearby trees) would affect protected trees in the future. • Treat Impacted Trees: Provide supplemental irrigation and other care, such as mulch and fertilizer, as deemed necessary by a Certified Arborist, to any trees impacted by construction. Treatment of any injuries should be performed by a Certified Arborist.	
Archaeological, Historical, and Tribal Cultural Resources			
Impact CUL-1: Potential to cause a substantial adverse change in the significance of a historical resource	**S**	**Mitigation Measure NOI-3b: Equipment Buffer Distances to Nearby Vibration-Sensitive Structures** Refer to Mitigation Measure NOI-3b below in Impact NOI-3b.	**LTS**
Impact CUL-2: Potential to cause a substantial adverse change in the significance of an archaeological resource	**S**	**Mitigation Measure LRDP-CUL-2a: Conduct cultural resources sensitivity training** Prior to any ground disturbance, construction crews will be required to attend cultural resources sensitivity training. The training will focus on identifying potential archaeological resources as well as human remains. If potential archaeological resources or human remains are encountered, construction crews will be instructed to notify the UC immediately. **Mitigation Measure LRDP-CUL-2b: Stop work in the event of discovery of an archaeological resource** If an archaeological resource is discovered during construction, all project-related ground disturbance within 100 feet of the find will cease. The UC will contact a qualified archaeologist within 24 hours to inspect the site. If a resource is determined to qualify as a unique archaeological resource (as defined by CEQA) and the UC determines, in compliance with PRC	**LTS**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		21083.2, which requires preservation in place as a first option, that the resource cannot feasibly be avoided, the UC will retain a qualified archaeologist to conduct excavations to recover the material. Any archaeologically important artifacts recovered during monitoring will be cleaned, cataloged, and analyzed, with the results presented in an archaeological data recovery report.	
Impact CUL-3: Disturbance of any human remains, including those interred outside of dedicated cemeteries	**S**	**Mitigation Measure LRDP-CUL-3b: Stop work if human remains are encountered** In the event of a discovery on campus of human bone, suspected human bone, or a burial, all excavation within 100 feet of the find will halt immediately and the University will contact a qualified archaeologist or the county coroner within 24 hours to determine whether the bone is human. Consistent with California Health and Safety Code Section 7050.5(b), which prohibits disturbance of human remains uncovered by excavation until the coroner has made a finding relative to PRC Section 5097.5 procedures, the University will ensure that the remains, and a reasonable buffer around the remains established in coordination with the coroner or archaeologist, are protected against further disturbance. If it is determined that the find is of Native American origin, the University will comply with the provisions of PRC Section 5097.98 regarding identification and involvement of the Native American Most Likely Descendant (MLD). If human remains cannot be left in place, the University will ensure that the qualified archaeologist and the MLD are provided opportunity to confer on archaeological treatment of human remains and that appropriate studies, as identified through this consultation, are carried out prior to reinterment. The University will provide results of all such studies to the local Native American community and will provide an opportunity of local Native American involvement in any interpretative reporting. If the human remains are determined to be historic and cannot be avoided and preserved in place, the project site will be excavated under the supervision of an archaeologist, and all human remains and associated artifacts will be removed from the site and analyzed. After analysis, all recovered human remains and associated artifacts will be placed in caskets and buried in a single mass grave at a local cemetery.	**LTS**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact TCR-1: Potential to cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American tribe and that is 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)	**NI**		
Impact TCR-2: Potential to cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American tribe and that is a resource determined by the lead agency to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1	**NI**		
Energy			
Impact EN-1: Wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation	**LTS**		
Impact EN-2: Conflict with or obstruction of a state or local plan for renewable energy or energy efficiency	**LTS**		
Geology, Soils, and Seismicity			
Impact GEO-1: Potential substantial adverse effects, including the risk of loss, injury, or death involving: liquefaction	**S**	**Mitigation Measure LRDP-GEO-1: Conduct Geotechnical Investigation** A site-specific, design-level geotechnical investigation will be conducted during the design phase of each building project under the 2020 LRDP Update. This investigation will be conducted by a licensed geotechnical engineer and include a seismic evaluation of ground	**LTS**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		acceleration under the design event as well as relevant soil conditions at the site. Geotechnical recommendations will subsequently be incorporated into the foundation and building design for the building project.	
Impact GEO-2: Potential to result in substantial soil erosion or the loss of topsoil	**LTS**	**Mitigation Measure LRDP-GEO-1: Conduct Geotechnical Investigation** Refer to measure description under Impact GEO-1.	**LTS**
Impact GEO-3: Placement of project-related facilities on expansive soil, creating substantial direct or indirect risks to life or property	**LTS**		
Greenhouse Gas Emissions			
Impact GHG-1: Generation of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	**LTS**		
Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	**LTS**		
Hazards and Hazardous Materials			
Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	**LTS**		
Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of	**S**	**Mitigation Measure LRDP-HAZ-2: Prepare a Phase I Environmental Site Assessment** To minimize the risk of encountering unknown contamination during construction of the project under the 2020 LRDP Update, the UC Davis Sacramento Campus would retain an environmental professional to prepare a Phase I Environmental Site Assessment before all ground-disturbing construction in areas not previously investigated. A Phase I Environmental	**LTS**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
hazardous materials into the environment (		Site Assessment would conform with the American Society for Testing and Materials Standard Practice E1527-05 and include at a minimum the following site assessment requirements. An onsite visit to identify current conditions (e.g., vegetative dieback, chemical spill residue, presence of above- or underground storage tanks). • An evaluation of possible risks posed by neighboring properties. • Interviews with persons knowledgeable about the site's history (e.g., current or previous property owners, property managers). • An examination of local planning files to check prior land uses and any permits granted. • File searches with appropriate agencies (e.g., State Water Board, fire department, county health department) having oversight authority relative to water quality and groundwater and soil contamination. • Examination of historical aerial photography of the site and adjacent properties. • A review of current and historic topographic maps of the site to determine drainage patterns. • An examination of chain-of-title for environmental liens and/or activity and land use limitations. If the Phase I Environmental Site Assessment indicates likely site contamination, a Phase II Environmental Site Assessment would be performed (also by an environmental professional). A Phase II Environmental Site Assessment would comprise the following: • Collection of original surface and/or subsurface samples of soil, groundwater, and building materials to analyze for quantities of various contaminants. • An analysis to determine the vertical and horizontal extent of contamination (if the evidence from sampling shows contamination). If contamination is uncovered as part of Phase I or II Environmental Site Assessments, remediation per EPA's RCRA regulations in 40 CFR Parts 260–299 will be required, and materials will be properly managed and disposed of prior to construction. Any contaminated soil identified on a project site must be properly disposed of in accordance with Department of Toxic Substances Control regulations in effect at the time. If, during construction, soil or groundwater contamination is suspected, construction activities in the vicinity of the discovery will cease and appropriate health and safety	

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		procedures will be implemented, including the use of appropriate personal protective equipment (e.g., respiratory protection, protective clothing, helmets, goggles).	
Impact HAZ-3: Result in hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school	**LTS**		
Impact HAZ-4: Place project-related facilities on a site that is included on a list of hazardous materials sites, resulting in creation of a significant hazard to the public or the environment	**S**	**Mitigation Measure LRDP-HAZ-2: Prepare a Phase I Environmental Site Assessment.** See above under Impact HAZ-2 for full text.	**LTS**
Impact HAZ-5: Impair implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan	**LTS**		
Hydrology and Water Quality			
Impact WQ-1: Violation of any water quality standards or waste discharge requirements or other degradation of surface or groundwater quality	**LTS**		
Impact WQ-2: Substantial decrease of groundwater supplies or substantial interference with groundwater recharge such that the project may impede sustainable groundwater management of the basin	**LTS**		
Impact WQ-3: Substantial alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation onsite or offsite, substantial increase in the amount of surface runoff in a manner that would result in flooding	**S**	**Mitigation Measure LRDP-WQ-1: Implement a Subsoil Drainage System to Avoid Damage to Buildings** In the event a sub-soil drainage system is required (as determined by a geotechnical analysis), the system will be installed underground to remove excessive water from the soil and avoid damage to buildings or landscaping. Groundwater from exterior building footings will be conveyed to a sump pump. The effluent will be pumped into the building storm drainage	**LTS**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
onsite or offsite, creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or alteration of the existing drainage pattern in a manner that would impede or redirect flood flows		system. Subsoil drainage systems that cannot discharge to the storm sewer by gravity flow will be drained by gravity to sump pumps and will be pumped into the building storm drainage system. Each sump pump will be sized for 100 percent of the estimated design flow. Sump pumps will be connected to the emergency (standby) power system to permit operation during a loss of normal power. Design criteria for the subsoil drainage system will be defined by the geotechnical report**.**	
Impact WQ-4: Conflict with or obstruction of implementation of a water quality control plan or sustainable groundwater management plan	**NI**		
Land Use and Planning			
Impact LU-1: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect	**LTS**		
Noise			
Impact NOI-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from construction activities in excess of applicable standards	**S**	**Mitigation Measure LRDP-NOI-1: Implementation of Measures to Reduce Construction Noise** For construction activities associated with future projects under the 2020 LRDP Update, UC Davis will implement or incorporate the following noise reduction measures into construction specifications for contractor(s) implementation during project construction: 1. Construction activities will be limited to the daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday, when feasible. 2. Pile driving will not occur outside of the daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday.	**SU**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		3. All construction equipment used for future projects will be equipped with suitable exhaust and intake silencers in good working order. All construction equipment will be properly maintained and equipped with intake silencers and exhaust mufflers and/or engine shrouds, in accordance with manufacturer recommendations. Equipment engine shrouds, if used, will be closed during equipment operation. 4. All construction equipment and equipment staging areas will be located as far as possible from nearby noise-sensitive land uses and/or located such that existing or constructed noise attenuating features (e.g., temporary noise wall or blankets) block line of sight between affected noise-sensitive land uses and construction staging areas, to the extent feasible. 5. Individual operations and techniques will be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete offsite instead of onsite) where feasible and consistent with building codes and other applicable laws and regulations. 6. Stationary noise sources such as generators or pumps will be located as far as feasible from noise-sensitive land uses. 7. No less than one week prior to the start of construction activities at a particular location, notification will be provided to academic, administrative, and residential or noise-sensitive uses (such as schools) located within 500 feet of the construction site. 8. For any construction activity that must extend beyond the daytime hours of 7:00 a.m. and 6:00 p.m. on weekdays and Saturdays, and between 9:00 a.m. and 6:00 p.m. on Sundays, the construction contractor for that project will ensure that noise levels at the nearest noise-sensitive land use do not exceed 55 dBA during the hours of 7:00 a.m. to 10:00 p.m. and 50 dBA during the hours of 10:00 p.m. to 7:00 a.m., as feasible. In addition to measures described above, the following measures may also help achieve this performance standard. a. Install temporary noise barriers as close as possible to the noise source or the receptor and located within the direct line-of-sight path between the noise source and nearby sensitive receptor(s). The barrier should be constructed of material that has a surface weight of at least 1 pound per square foot and has an acoustical rating of at least 25 STC (Sound Transmission Class). This can include a temporary barrier constructed with plywood support on a wood frame, sound curtains supported on a frame, or other comparable material. b. Use “quiet” gasoline-powered compressors or electrically powered compressors as well as electric rather than gasoline- or diesel-powered forklifts for small lifting, where feasible. c. Prohibit idling of inactive construction equipment for prolonged periods (i.e., more than 2 minutes).	

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		d. Retain a qualified noise specialist to conduct noise monitoring to ensure that noise reduction measures achieve the necessary reductions such that levels at the receiving land uses do not exceed 55 dBA during the hours of 7:00 a.m. to 10:00 p.m. and 50 dBA during the hours of 10:00 p.m. to 7:00 a.m.	
Impact NOI-2: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from operations in excess of applicable standards	**S**	**Mitigation Measure LRDP-NOI-2a: Reduce noise exposure from emergency generators** Prior to approval of a building permit for individual LRDPs proposing the installation of emergency generators, documentation will be submitted to the University demonstrating with reasonable certainty that noise from testing of the proposed generator(s) would not exceed 55 dBA at the nearest residential land use. Acoustical treatments to reduce noise from generator testing may include, but are not limited to, the following. • Enclosing generator(s) • Incorporating the use of exhaust mufflers or silencers to reduce exhaust noise • Selecting a relatively quiet generator model • Orienting or shielding generator(s) to protect noise-sensitive receptors to the greatest extent feasible • Increasing the distance between generator(s) and noise-sensitive receptors • Placing barriers or enclosures around generator(s) to facilitate the attenuation of noise. In addition, all project generator(s) will be tested only between the hours of 7:00 a.m. and 10:00 p.m. The University will ensure that all recommendations from the acoustical analysis necessary to ensure that generator noise would meet the above requirements will be incorporated into the building design and operations.	**LTS**
Impact NOI-3: Generation of excessive groundborne vibration or groundborne noise levels	**S**	**Mitigation Measure NOI-3a: Limit Nighttime Vibration-Generating Construction Activities for In-Street SMUD Work** For in-street construction activities under the SMUD component that take place during nighttime hours, the following buffer distances shall be maintained between vibration-generating equipment and the nearest off-site sensitive use where people may sleep: • Vibratory Roller: 140 feet • Large bulldozer: 78 feet • Small bulldozer: 10 feet	**LTS**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Specifically, a vibratory roller and a large bulldozer shall not be used within 140 feet and 78 feet, respectively, of land uses where people sleep during nighttime hours. As a result of these buffer distances, the use of a large bulldozer and vibratory roller likely would not be permitted during nighttime hours along roadway segments developed with residential land uses. Any construction work requiring this equipment would be limited to daytime hours within these distances of residences. **Mitigation Measure NOI-3b: Equipment Buffer Distances to Nearby Vibration-Sensitive Structures** For in-street construction activities under the SMUD component, vibration levels at the nearest off-site sensitive structures similar to "historic and some old buildings" shall be limited to 0.25 PPV in/sec, or less, and vibration levels at the nearest "older residential structure" shall be limited to 0.3 PPV in/sec, or less. To ensure these vibration levels are not exceeded, the following buffer distances shall be maintained between vibration-generating equipment (or similar) and the nearest off-site sensitive structures similar to "historic and some old buildings" (with a vibration-related damage criterion of 0.25 PPV in/sec): • Vibratory Roller: 23 feet • Large bulldozer (or similar, such as an excavator): 13 feet • Small bulldozer: 2 feet In addition, the following buffer distances shall be maintained between vibration-generating equipment and the nearest off-site sensitive structures similar to "older residential structures" (with a vibration-related damage criterion of 0.3 PPV in/sec): • Vibratory Roller: 20 feet • Large bulldozer (or similar, such as an excavator): 12 feet • Small bulldozer: 2 feet Once final equipment for the in-street SMUD component construction has been selected, tailored buffer distances based on the size and types of equipment.	
Impact NOI-4: Placement of project-related activities in the vicinity of a private airstrip or an airport land use plan or within 2 miles of a public	**LTS**		

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
airport or public use airport, resulting in exposure of people residing or working in the project area to excessive noise levels			
Population and Housing			
Impact POP-1: Induce substantial unplanned population growth either directly or indirectly	**LTS**		
Public Services			
Impact PS-1: Creat a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection facilities	**LTS**		
Impact PS-2: Creat a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for police protection facilities	**LTS**		
Impact PS-3: Creat a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for school facilities	**LTS**		
Impact PS-4: Creat a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other	**LTS**		

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
performance objectives for other public facilities			
Recreation			
Impact REC-1: Increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated	**LTS**		
Transportation, Circulation, and Parking			
Impact TRA-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities	**LTS**		
Impact TRA-2: Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)	**LTS**		
Impact TRA-3: Result in changes to the transportation system that would create hazardous features or incompatible traffic uses	**LTS**		
Impact TRA-4: Result in inadequate emergency access	**LTS**		
Impact TRA-5: Result in construction activity that could cause temporary impacts on transportation and traffic	**S**	**Mitigation Measure LRDP-TRA-5: Prior to the issuance of any grading or building permits, a Construction Traffic Management Plan (TMP) will be prepared to the satisfaction of UC Davis Health and the City of Sacramento Department of Public Works for City-owned roadways** The Construction TMP will include items such as the following. • Preserving emergency vehicle access routes to existing buildings on the Sacramento Campus	**LTS**

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		• Providing truck circulation routes/patterns that minimize effects on existing vehicle traffic during peak travel periods and maintain safe bicycle circulation • Monitoring for roadbed damage and timing for completing repairs • Preserving safe and convenient passage for bicyclists and pedestrians through/around construction areas • Creating methods for partial (i.e., single-lane)/complete street closures (e.g., timing, signage, location and duration restrictions), if necessary • Identifying detour routes for roadways subject to partial/complete street closures • Identifying temporary UC Davis shuttle stops and detoured shuttle routes if existing stops or routes are affected • Identifying temporary SacRT bus stops and detoured bus routes, if existing stops or routes are affected • Developing criteria for use of flaggers and other traffic controls • Providing a point of contact for nearby residents, Sacramento Campus staff, students, visitors, and other stakeholders to contact to obtain construction information and have questions answered The Construction TMP will be developed so that the following performance standards are achieved throughout project construction. • Maintain emergency vehicle access to all buildings on the Sacramento Campus at all times. • Maintain identified emergency vehicle routes to UC Davis Health medical facilities at all times. Notify appropriate contacts for UC Davis Health and/or emergency responders at least 24 hours prior to any construction-related partial/complete closures that may affect emergency vehicle routes, and provide clear identification of detours when necessary. • Minimize construction traffic during morning and evening peak periods when traffic on local and campus streets is highest • Close (i.e., partially or fully) any construction-related public roadways only during off-peak periods and provide appropriate construction signage, including detour routing • Limit detour routing to campus roadways or city collector and arterial roadways, such as Stockton Boulevard and Broadway, to the extent feasible. Include measures to minimize traffic increases on local residential roadways; this may include signage and law	

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		enforcement presence during partial/complete closures to discourage through-traffic use of local residential roadways • Clear roadways, sidewalks, crosswalks, and bicycle facilities of debris (e.g., rocks) that could otherwise impede travel and affect public safety, and maintain them in this condition UC Davis will also consider any concurrent construction activity and other active Construction TMPs when reviewing new Construction TMPs for specific LRDP implementation projects. This review will address the effects of simultaneous construction activity.	
Utilities and Service Systems			
Impact UT-1: Relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, with the potential to cause significant environmental effects	**LTS**		
Impact UT-2: Creation of a need for new or expanded entitlements or resources for sufficient water supply to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years	**LTS**		
Impact UT-3: A determination by the wastewater treatment provider that serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments	**LTS**		
Impact UT-4: Project-related exceedance of state or local solid waste standards or of the capacity of local	**LTS**		

Table ES-1. Continued

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
infrastructure, or other impediments to attaining solid waste reduction goals			
Impact UT-5: Inconsistency with federal, state, and local management and reduction statutes and regulations related to solid waste	**LTS**		

Table ES-2. CUP Expansion Project Mitigation and Monitoring Program

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing		Verification
Aesthetics					
Impact AES-2: Introduction of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area	**Mitigation Measure LRDP-AES-2a: Apply design measures to building exteriors** Design for specific projects will provide for the use of textured, nonreflective exterior surfaces and nonreflective glass.	Review project design for use of textured, nonreflective exterior surfaces and nonreflective glass.	DE	Prior to final design approval	Sacramento Campus Facilities Planning and Development and SMUD
	Mitigation Measure LRDP-AES-2b: Utilize directional lighting methods Except as provided in Mitigation Measure LRDP AES-4c, all new outdoor lighting will use directional lighting methods with shielded and cutoff type light fixtures to minimize glare and upward-directed lighting.	Review project design for use of directional lighting methods.	DE	Prior to final design approval	Sacramento Campus Facilities Planning and Development and SMUD
	Mitigation Measure LRDP-AES-2c: Review lighting, landscape, and architectural features prior to installation Non-cutoff, unshielded lighting fixtures used to enhance nighttime views of walking paths, specific landscape features, or specific architectural features will be reviewed by the Sacramento Campus Facilities Design and Construction staff prior to installation to ensure that the minimum amount of required lighting is proposed to achieve the desired nighttime emphasis, and the proposed illumination creates no adverse effect on nighttime views.	Review project design for lighting, landscaping, and architectural features.	DE	Prior to final project design	Sacramento Campus Facilities Planning and Development and SMUD
	Mitigation Measure LRDP-AES-2d: Implement updated lighting design The University will implement the use of the specific lighting design and equipment designed	Implement updated lighting design.	OP	During operation; ongoing as older exterior lighting fixtures are replaced	Sacramento Campus Facilities Planning and Development and SMUD

SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	to reduce light spill and glare when older lighting fixtures and designs are replaced over time.				
Air Quality					
Impact AQ-2: Cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard	**Mitigation Measure LRDP-AQ-2a: Reduce construction-generated fugitive dust** Land use development projects as part of the implementation of the 2020 LRDP Update will require all construction contractors to implement the following measures to reduce construction-generated fugitive dust. Control of fugitive dust is required per SMAQMD Rule 403 and enforced by SMAQMD staff. The list of required measures was informed by SMAQMD's basic and enhanced construction emission control practices. • Water exposed soil with adequate frequency to prevent fugitive dust and particulates from leaving the project site. However, do not overwater to the extent that sediment flows off the site. Exposed surfaces include, but are not limited to, soil piles, graded areas, and unpaved parking areas. • Suspend excavation, grading, and/or demolition activity when sustained wind speeds exceed 25 miles per hour (mph). • Install wind breaks (e.g., trees, solid fencing) on the average dominant windward side(s) of construction areas. For purposes of implementation, chain-link fencing with added landscape mesh fabric adequately qualifies as solid fencing.	Incorporate measure as part of construction specifications and documentation and inspect construction site at regular intervals during construction to verify compliance with specified construction-generated fugitive dust reduction measures.	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	Sacramento Campus Facilities Planning and Development and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	• For dust control in disturbed but inactive construction areas, apply soil stabilization measures adequate to mitigate airborne particulates as soon as possible. • Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. • Treat site accesses from the paved road with a 6- to 12-inch layer of wood chips, mulch, gravel, or other approved method to reduce generation of road dust and road dust carryout onto public roads. • Cover or maintain at least 2 feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered. • Establish a 15-mph speed limit for vehicles driving on unpaved portions of project construction sites. • Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The phone number of the SMAQMD will also be visible to ensure compliance. UC Davis will ensure that the implementation of this mitigation measure is consistent with the UC Davis stormwater program and does not			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	result in offsite runoff as a result of watering for dust control purposes.				
	Mitigation Measure LRDP-AQ-2b: Reduce construction-generated emissions from equipment and vehicle exhaust Land use development projects as part of the implementation of the 2020 LRDP Update will require all construction contractors to implement the following measures to reduce construction-generated emissions from equipment and vehicle exhaust. The list of required measures was informed by SMAQMD's basic and enhanced construction emission control practices. • For all development except Aggie Square Phase I, use construction equipment with engines meeting EPA Tier 3 or better emission standards prior to 2025 and EPA Tier 4 Final or better emission standards beginning in 2025. For Aggie Square Phase I, all engines must be EPA certified Tier 4 Final or better, regardless of construction year. Equipment requirements may be waived by UC Davis, but only under any of the following unusual circumstances: If a particular piece of off-road equipment with Tier 4 Final standards or Tier 3 standards is technically not feasible, not commercially available, or there is a compelling emergency need to use off-road equipment that does not meet the equipment requirements above. If UC Davis grants the waiver, the contractor will use the next cleanest piece of off-road equipment	Incorporate measure as part of construction specifications and documentation and inspect construction site at regular intervals during construction to verify compliance with specified construction-generated emissions reduction measures.	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	Sacramento Campus Facilities Planning and Development and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	available, in the following order: Tier 4 Interim, Tier 3, and then Tier 2 engines. • Use renewable diesel fuel in all heavy-duty off-road diesel-fueled equipment. Renewable diesel must meet the most recent ASTM D975 specification for ultra low-sulfur diesel and have a carbon intensity no greater than 50 percent of diesel with the lowest carbon intensity among petroleum diesel fuels sold in California. • All diesel on-road trucks used to haul construction materials will use a model year 2010 or newer engine. • Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (California Code of Regulations, Title 13, Sections 2449[d][3] and 2485). Provide clear signage that posts this requirement for workers at the entrances to the site. • Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation (California Code of Regulations, Title 13, Sections 2449 and 2449.1). • Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	Mitigation Measure LRDP-AQ-2c: Reduce evaporative emissions during architectural coatings Land use development projects as part of the implementation of the 2020 LRDP Update will require all construction contractors to use no- or low-solids content (i.e., no- or low-volatile organic compound [VOC]) architectural coatings with a maximum VOC content of 50 grams per liter.	Incorporate measure as part of construction and contractor specifications and documentation and inspect construction site at regular intervals during construction to verify compliance with specified measure.	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	Sacramento Campus Facilities Planning and Development and SMUD
	Mitigation Measure LRDP-AQ-2d: Offset construction-generated NO_X emissions in excess of SMAQMD's threshold of significance Construction-generated emissions of NO_X would exceed the SMAQMD's threshold of significance during 2020, 2022 and 2024. Because construction-generated NOx emissions would exceed SMAQMD's threshold of significance, UC Davis will pay a mitigation fee in the amount of $4,558 and an administrative fee in the amount of $228 to SMAQMD to reduce the project impacts from construction NO_X emissions to a less-than-significant level. This fee will be used to fund emissions reduction projects within the Sacramento Valley Air Basin. The types of projects that have been used in the past to achieve such reductions include electrification of stationary internal combustion engines (such as agricultural irrigations pumps); replacing old trucks with new, cleaner, more efficient trucks; and a host of other stationary and mobile-source emissions-reducing projects. The fee amount is based on an offset cost of $30,000 per ton of NO_X and the	UC Davis will pay the mitigation and administrative fees in full prior to issuing a demolition or grading permit.	DE	During project design; prior to construction	Sacramento Campus Facilities Planning and Development and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	total quantity of NO_X emissions in excess of SMAQMD's NO_X threshold (304 pounds or 0.15 ton based on the daily exceedances in 2020, 2022, and 2024). The administrative fee is 5 percent of the fee amount. UC Davis will pay the mitigation and administrative fees in full prior to issuing a demolition or grading permit for the first project developed under the 2020 LRDP Update. For construction projects under the 2020 LRDP Update occurring during 2020, 2022, and 2024, construction contractors will provide annual construction activity monitoring data to estimate actual construction emissions. UC Davis will submit the annual construction activity monitoring data and an estimate of actual annual NO_X emissions to SMAQMD for review by February 1 of each year for the prior construction year. The annual report will reconcile paid fees for the prior year relative to actual emissions. If more emissions were generated than fees paid, UC Davis will submit payment for the deficient amount based on an offset cost of $30,000 per ton of NO_X. If more fees were paid than emissions generated, SMAQMD will either issue UC Davis a refund for the surplus or a credit that can be applied to future fee payments. An alternative payment plan may be negotiated by UC Davis based on the timing of construction phases that are expected to exceed the SMAQMD's threshold of significance. Any alternative payment plan must be acceptable to SMAQMD and agreed upon in writing prior to			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	issuance of a demolition or grading permit by UC Davis. In coordination with SMAQMD, UC Davis, or its designee, may reanalyze construction NO_X emissions from the 2020 LRDP Update prior to starting construction to update the required mitigation and administrative fees. The analysis must be conducted using SMAQMD-approved emissions model(s) and the fee rates published at the time of reanalysis. The analysis may include onsite measures to reduce construction emissions if deemed feasible by UC Davis. All onsite measures assumed in the analysis must be included in the construction contracts and be enforceable by UC Davis.				
	Mitigation Measure AQ-2: Reanalyze project emissions and offset construction-generated NOX emissions in excess of SMAQMD's threshold of significance If the SMUD Component will be constructed in 2025, construction-generated emissions of NOX may exceed the SMAQMD's threshold of significance during that year. In coordination with SMAQMD, UC Davis, or its designee, will reanalyze construction NOX emissions in 2025 prior to starting construction of the SMUD Component. The analysis must be conducted using SMAQMD-approved emissions model(s) and account for all project construction activity scheduled to occur in 2025 (i.e., SMUD Component, make-ready projects, CUP expansion). The analysis may include onsite measures to reduce construction emissions if deemed feasible by UC Davis. All onsite	UC Davis will reanalyze NOx emissions if SMUD component is constructed. UC Davis will pay the mitigation and administrative fees in full prior to issuing a demolition or grading permit.	DE	During project design; prior to construction	SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	measures assumed in the analysis must be included in the construction contracts and be enforceable by UC Davis. The required mitigation fee amount will be calculated based on the amount of quantified NOx emissions in excess of SMAQMD's threshold of 85 pounds per day and the fee rates published at the time of reanalysis. The fee will be used to fund emissions reduction projects within the SVAB. The types of projects that have been used in the past to achieve such reductions include electrification of stationary internal combustion engines (such as agricultural irrigations pumps); replacing old trucks with new, cleaner, more efficient trucks; and a host of other stationary and mobile source emissions-reducing projects. UC Davis will pay the SMAQMD mitigation and administration fees in full prior to construction of the SMUD component. For construction occurring during 2025, construction contractors will provide annual construction activity monitoring data to estimate actual construction emissions. UC Davis will submit the annual construction activity monitoring data and an estimate of actual annual NOx emissions to SMAQMD for review by February 1, 2026. The annual report will reconcile paid fees, if any, for 2025 relative to actual emissions. If more emissions were generated than fees paid, UC Davis will submit payment for the deficient amount based on an offset cost per ton of NOX. If more fees were paid than emissions			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing		Verification
	generated, SMAQMD will issue UC Davis a refund for the surplus.				
Impact AQ-3: Exposure of sensitive receptors to substantial pollutant concentrations	**Mitigation Measure LRDP-AQ-2a: Reduce construction-generated fugitive dust** See text above under Impact AQ-2.	Incorporate measure as part of construction specifications and documentation and inspect construction site at regular intervals during construction to verify compliance with specified construction-generated fugitive dust reduction measures.	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	Sacramento Campus Facilities Planning and Development and SMUD
	Mitigation Measure LRDP-AQ-2b: Reduce construction-generated emissions from equipment and vehicle exhaust See text above under Impact AQ-2	Incorporate measure as part of construction specifications and documentation and inspect construction site at regular intervals during construction to verify compliance with specified construction-generated emissions reduction measures.	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	Sacramento Campus Facilities Planning and Development and SMUD
	Mitigation Measure LRDP-AQ-2c: Reduce evaporative emissions during architectural coatings See text under Impact AQ-2.	Incorporate measure as part of construction and contractor specifications and documentation and inspect construction site at regular intervals during construction to	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	Sacramento Campus Facilities Planning and Development and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
		verify compliance with specified measure.			
	Mitigation Measure LRDP-AQ-2d: Offset construction-generated NOX emissions in excess of SMAQMD's threshold of significance See text under Impact AQ-2	UC Davis will pay the mitigation and administrative fees in full prior to issuing a demolition or grading permit.	DE	During project design; prior to construction	Sacramento Campus Facilities Planning and Development and SMUD
	Mitigation Measure LRDP-AQ-3b: Reduce receptor exposure to operations generated toxic air contaminants UC Davis will require all diesel emergency generators on the Sacramento Campus to use renewable diesel fuel. Renewable diesel must meet the most recent ASTM D975 specification for ultra low-sulfur diesel and have a carbon intensity no greater than 50 percent of diesel with the lowest carbon intensity among petroleum diesel fuels sold in California. All diesel generators must be transitioned to renewable diesel fuel no later than December 31, 2039. UC Davis will then employ a tiered approach to further reduce sensitive receptor exposure to toxic air contaminants generated by the Sacramento Campus Central Energy Plant. The selected control strategy must be implemented prior to December 31, 2039. The approach will be taken in the following way: • Replace at least three of the existing Tier 0 generators with engines meeting EPA Tier 4 Final or better emission standards. If the engine cannot be replaced, then	Incorporate measure as part of construction specifications and documentation and inspect construction site at regular intervals during construction to verify compliance with specified construction-generated emissions reduction measures.	DE/CO	Regular intervals throughout the construction period and during project design	Sacramento Campus Facilities Planning and Development and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	• Require at least three of the existing Tier 0 generators operate with the most effective California Air Resources Board Verified Diesel Emissions Controls (VDECs) available for the engine type (effectively level 3). If the engine cannot be retrofitted with VDECs, then • Require all existing Tier 0 generators without VDECs to increase the stack height by at least 20 feet.				
	Mitigation Measure AQ-2: Reanalyze project emissions and offset construction-generated NOX emissions in excess of SMAQMD's threshold of significance See text under Impact AQ-2	UC Davis will reanalyze NOx emissions if SMUD component is constructed. UC Davis will pay the mitigation and administrative fees in full prior to issuing a demolition or grading permit.	DE	During project design; prior to construction	SMUD
Biological Resources					
Impact BIO-2: Disturbance of vegetation-nesting migratory birds and raptors, including Swainson's hawk and white-tailed kite	**Mitigation Measure LRDP-BIO-2: Conduct preconstruction surveys for nesting migratory birds and raptors, including special-status species, and establish protective buffers** For any projects implemented under the 2020 LRDP Update that would require vegetation removal (i.e., trees, shrubs, and ruderal vegetation) or would result in construction disturbances in the vicinity of vegetated areas, the following measures will be implemented prior to initiation of construction to avoid and	Retain a qualified biologist to conduct preconstruction surveys; implement measures as applicable.	DE/CO	Prior to final design approval and ongoing during project construction.	Sacramento Campus Facilities Planning and Development and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	minimize impacts on Swainson's hawk, white-tailed kite, and other vegetation-nesting migratory birds and raptors and avoid violation of the MBTA, CESA, and California Fish and Game Code Sections 3503, 3503.5, and 3511. • For construction activities that occur during the nesting season for migratory birds and raptors, between February 15 and August 31, the University will ensure that a qualified wildlife biologist familiar with the nesting behavior of bird species that occur in the plan area to conduct a preconstruction nesting bird survey. The nesting bird surveys will be conducted no more than 14 days prior to vegetation removal or construction disturbance activities near nesting habitat. The survey will include a search of all trees and shrubs and ruderal areas that provide suitable nesting habitat for birds and raptors within the construction disturbance area. In addition, a 600-foot area around the construction area will be surveyed for nesting raptors, and a 100-foot area around the construction area will be surveyed for songbirds. • If no special-status raptor species (i.e., Swainson's hawk or white-tailed kite) or active bird or raptor nests are detected during the preconstruction surveys, then no additional measures are required. If an active nest is found in the survey area, a no-disturbance buffer will be established to avoid disturbance or destruction of the nest site until the end of the breeding season (generally August 31) or until after a			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	qualified wildlife biologist determines that the young have fledged and moved out of the construction area (this date varies by species). The extent of these buffers will be determined by a qualified biologist in coordination with any applicable agencies (as determined by species) and will depend on the level of noise or construction disturbance taking place, the line-of-sight between the nest and the disturbance, ambient levels of noise and other non-project disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species; however, a minimum of 50 feet for songbirds and 300 feet for raptors is typical. In developed habitats, buffer areas may be adjusted based on presence of existing barriers				
Impact BIO-3: Disturbance of structure-nesting migratory birds, including purple martin	**Mitigation Measure LRDP-BIO-3: Modify existing structures during the non-breeding season for purple martin and other structure-nesting migratory birds or implement exclusion measures to deter nesting** For any projects implemented under the 2020 LRDP Update that would modify or demolish any existing building structures, the following measures will be implemented prior to initiation of construction to avoid and minimize impacts on purple martins and other structure-nesting migratory birds and avoid violation of the MBTA and California Fish and Game Code Section 3503.	Retain a qualified biologist to conduct preconstruction surveys; implement measures as applicable during construction.	DE	Prior to final design approval and project construction	Sacramento Campus Facilities Planning and Development and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	• Conduct building demolition and modification activities during the non-breeding season for structure-nesting migratory birds (generally September 1 through January 31). If this is not possible, the University will implement the following avoidance measures: • Prior to the start of each phase of demolition/construction that is anticipated to occur during the migratory bird breeding season (generally February through August), the University will retain a qualified wildlife biologist to thoroughly inspect structures that would be modified or disturbed to locate remnant bird nests or areas such as drain holes or crevices that could be used as nesting areas by migratory birds such as purple martins. It is preferable to perform this survey in the non-breeding season (September 1 through January 31) so that, if nests are found and are determined to be inactive, they may be removed. • After inactive nests are removed and prior to construction that would occur between February 1 and August 31, known or potential nesting areas on or within the building structure to be modified or demolished will be covered with a suitable exclusion material that will prevent birds from nesting (i.e., 0.5- to 0.75-inch mesh netting, plastic tarp, or other suitable material safe for wildlife). Portions of the existing structures containing drain holes or crevices that would be modified or disturbed also will be covered or filled with suitable			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	material to prevent nesting (i.e., fiberglass insulation, foam padding, and polyvinyl chloride [PVC]/acrylonitrile butadiene styrene [ABS] caps). The University will ensure that a qualified wildlife management specialist experienced with installation of bird exclusion materials will ensure that exclusion devices are properly installed and will avoid inadvertent entrapment of migratory birds. All exclusion devices will be installed before February 1 and will be monitored throughout the breeding season (typically several times a week). The exclusion material will be anchored so that birds cannot attach their nests to the structures through gaps in a net. • Exclusion devices for migratory birds will be installed consistent with bat exclusion measures and in a manner that does not entrap day-roosting bats. • If exclusion material is not installed on structures prior to February 1 and migratory birds colonize a structure, removal or modification to that portion of the structure may not occur until after August 31 or until a qualified biologist has determined that the young have fledged and the nest is no longer in use. • If surveys determine that no active bird nests are present within existing structures to be modified or demolished and appropriate steps are taken to prevent migratory birds from constructing new nests, as described in the preceding			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	measures, work can proceed at any time of the year.				
Impact BIO-4: Disturbance of structure-roosting bats	**Mitigation Measure LRDP-BIO-4: Conduct pre-construction surveys for roosting bats and implement protection measures** Baseline data about how bats may use structures in the plan area, their individual numbers, or how they vary seasonally are not available. Daily and seasonal variations in habitat use by bats is common. To obtain the highest likelihood of detection, the following pre-construction bat surveys will be conducted within the construction area prior to modification or demolition of existing building structures. If surveys determine that bats are roosting in the construction area, the University will implement the following protective measures. *Conduct Pre-Construction Surveys at Structures* • Before work begins on any building or structure, qualified biologists will conduct a daytime search for bat signs and evening emergence surveys to determine whether the structure is being used as a roost. Biologists conducting daytime surveys will listen for audible bat calls and will use the naked eye, binoculars, and a high-powered spotlight to inspect crevices, drain holes, and other visible features that could house bats. Building surfaces and the ground around the structure will be surveyed for bat signs, such as guano, staining, and prey remains. Surveys will occur no earlier than two weeks prior to the construction start-date.	Retain a qualified biologist to conduct preconstruction surveys; implement measures as applicable during construction.	DE	Prior to final design approval and project construction	Sacramento Campus Facilities Planning and Development and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	• Qualified biologists also will conduct evening emergence surveys at structures that contain suitable roosting areas. The surveys will consist of at least one biologist stationed near potential entry and exit points of the structure watching for emerging bats from a half hour before sunset to 1–2 hours after sunset for a minimum of 2 nights at each survey location within the season that construction would be taking place. Surveys may take place over several nights to fully cover the extent of structure work. All emergence surveys will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted). Survey methodology may be supplemented as new research identifies advanced survey techniques and equipment that would aid in bat detections. Acoustic detectors will be used during emergence surveys to obtain data on bat species present in the survey area at the time of detection. • If a building or structure proposed for modification or demolition is identified as supporting an active bat roost, additional surveys may be required to determine how the structure is used by bats—whether it is used as a night roost, maternity roost, migration stopover, or for hibernation. *Identify Protective Measures for Bats Using Structures*			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	• If it is determined that bats are using building structures within or adjacent to the construction area as roost sites, the University will coordinate with CDFW to identify protective measures to avoid and minimize impacts on roosting bats based on the type of roost and timing of activities. These measures could include the following actions. o If a non-maternity roost is located within a structure that would be modified or disturbed in a manner that would expose the roost, bats will be excluded from the structure by a qualified wildlife management specialist working with a bat biologist. An exclusion plan will be developed in coordination with CDFW that identifies the type of exclusion material/devices to be used, the location and method for installing the devices, and monitoring schedule for checking the effectiveness of the devices. Exclusion devices will be installed between September 15 and October 31 to avoid affecting maternal and hibernating bat roosts and will take place during weather and temperature conditions conducive to bat activity. Because bats are expected to tolerate temporary construction noise and vibrations, bats will not be excluded from structures if no direct impacts on the roost are anticipated. o An alternative to installing exclusion devices would be to make structural			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	changes to a known roost proposed for removal to create conditions in the roost that are undesirable to roosting bats and encourage the bats to leave on their own (e.g., open additional portals so that the temperature, wind, light, and precipitation regime in the roost change). Structural changes to the roost will be authorized by CDFW and will be performed during the appropriate exclusion timing (listed above) to avoid harming bats. ○ If a maternity roost is located, whether solitary or colonial, that roost will remain undisturbed until September 15 or until a qualified biologist has determined that the roost is no longer active.				
Impact BIO-5: Conflict with a local policy or ordinance protecting biological resources, such as a tree preservation policy or ordinance	**Mitigation Measure BIO-5: Tree Protection** Prior to site disturbance, SMUD shall provide a plan of all tree work to the City. A Certified Arborist shall approve all work plans prior to submittal to the City. For trees that will be preserved on site during project construction, the following guidelines are recommended to ensure the long-term survival and stability of the trees. • Educate Workers: Educate all workers on site about tree protection guidelines and requirements prior to construction. • Establish a Tree Protection Zone: Establish a tree protection zone (TPZ) around any tree or group of trees designated for retention. The TPZ should at minimum be equal to 1.5	Retain a Certified Arborist to approve SMUD's work plans and implement measures as applicable during construction.	DE	Prior to site disturbance	SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	times the radius of the dripline. The TPZ may be adjusted on a case-by-case basis after consultation with a Certified Arborist. • Install Fencing and Signage: Install fencing around the TPZ of all trees or groups of trees designated for retention. The fencing should remain in place for the duration of construction activities. Post appropriate signage to help convey the importance of the TPZ to workers. • Prohibit Construction Activities within the TPZ: Prohibit construction-related activities, including grading, trenching, construction, demolition, or other work, within the TPZ. No heavy equipment or machinery should be operated within the TPZ. No construction materials, equipment, machinery, or other supplies should be stored within the TPZ. Vehicle and foot traffic should not be permitted within the TPZ. No wires or signs should be attached to any trees designated for retention. • Selected Trees: Prune selected trees to provide necessary clearance during construction and to remove any defective limbs or other tree parts that may pose a failure risk. All pruning should be completed by a Certified Arborist or Tree Worker and adhere to the Tree Pruning Guidelines of the International Society of Arboriculture. • Monitor Trees and TPZs: Monitor the integrity of the TPZs and the health of the trees designated for retention regularly throughout the construction process. A			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	Certified Arborist should monitor the health and condition of the protected trees and, if necessary, recommend additional mitigations and appropriate actions. This could include the monitoring of trees adjacent to project facilities to determine if construction activities (including the removal of nearby trees) would affect protected trees in the future. • Treat Impacted Trees: Provide supplemental irrigation and other care, such as mulch and fertilizer, as deemed necessary by a Certified Arborist, to any trees impacted by construction. Treatment of any injuries should be performed by a Certified Arborist.				
Cultural Resources					
Impact CUL-1: Potential to cause a substantial adverse change in the significance of a historical resource	**Mitigation Measure NOI-3b: Equipment Buffer Distances to Nearby Vibration-Sensitive Structures** See text below under Impact NOI-3b	Include measure in contract specifications; SMUD to inspect construction site to verify measure is implemented.	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	Sacramento Campus Facilities Planning and Development, UC Davis Environmental Planning and SMUD
Impact CUL-2: Potential to cause a substantial adverse change in the significance of an archaeological resource	**Mitigation Measure LRDP-CUL-2a: Conduct cultural resources sensitivity training** Prior to any ground disturbance, construction crews will be required to attend cultural resources sensitivity training. The training will focus on identifying potential archaeological resources as well as human remains. If potential archaeological resources or human remains are encountered, construction crews will be instructed to notify the University immediately.	Include training in construction contract; complete informal training.	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	UC Davis Environmental Planning and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	Mitigation Measure LRDP-CUL-2b: Stop work in the event of discovery of an archaeological resource If an archaeological resource is discovered during construction, all project-related ground disturbance within 100 feet of the find will cease. The University will contact a qualified archaeologist within 24 hours to inspect the site. If a resource is determined to qualify as a unique archaeological resource (as defined by CEQA) and the University determines, in compliance with PRC 21083.2, which requires preservation in place as a first option, the University will devote retain a qualified archaeologist to conduct excavation to recover the material. Any archaeologically important artifacts recovered during monitoring will be cleaned, cataloged, and analyzed, with the results presented in an archaeological data recovery report.	Include measure in construction contracts and verify that work is halted; retain archaeologist to assess find. If find is significant, implement additional measures as specified, including documentation.	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	UC Davis Environmental Planning and SMUD
Impact CUL-3: Disturbance of any human remains, including those interred outside of dedicated cemeteries	**Mitigation Measure LRDP-CUL-3b: Stop work if human remains are encountered** In the event of a discovery on campus of human bone, suspected human bone, or a burial, all excavation within 100 feet of the find will halt immediately and the University will contact a qualified archaeologist or the county coroner within 24 hours to determine whether the bone is human. Consistent with California Health and Safety Code Section 7050.5(b), which prohibits disturbance of human remains uncovered by excavation until the coroner has made a finding relative to PRC Section 5097.5 procedures, the	Include measure in construction contracts and verify that work is halted in the event of discovery of suspected human bone; retain archaeologist and contact county coroner.	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	UC Davis Environmental Planning and SMUD
		Arrange for archaeologist to confer with MLD to develop appropriate treatment options; document	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	UC Davis Environmental Planning and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	University will ensure that the remains, and a reasonable buffer around the remains established in coordination with the coroner or archaeologist, are protected against further disturbance. If it is determined that the find is of Native American origin, the University will comply with the provisions of PRC Section 5097.98 regarding identification and involvement of the Native American Most Likely Descendant (MLD).	repatriation or reinterment.			
		Archaeologist to supervise excavation and burial, as described.	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	UC Davis Environmental Planning and SMUD
	If human remains cannot be left in place, the University will ensure that the qualified archaeologist and the MLD are provided opportunity to confer on archaeological treatment of human remains and that appropriate studies, as identified through this consultation, are carried out prior to reinterment. The University will provide results of all such studies to the local Native American community and will provide an opportunity of local Native American involvement in any interpretative reporting.				
	If the human remains are determined to be historic and cannot be avoided and preserved in place, the area of the project site will be excavated under the supervision of an archaeologist, and all human remains and associated artifacts will be removed from the site and analyzed. After analysis, all recovered human remains and associated artifacts will be placed in caskets and buried in a single mass grave at a local cemetery.				

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
Geology, Soils, and Seismicity					
Impact GEO-1: Potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction	**Mitigation Measure LRDP-GEO-1: Conduct Geotechnical Investigation** A site-specific, design-level geotechnical investigation will be conducted during the design phase of each building project under the 2020 LRDP Update. This investigation will be conducted by a licensed geotechnical engineer and include a seismic evaluation of ground acceleration under the design event as well as relevant soil conditions at the site. Geotechnical recommendations will subsequently be incorporated into the foundation and building design for the building project.	Retain a certified engineering geologist or licensed geotechnical engineer to conduct site-specific geotechnical investigation; document implementation of geotechnical recommendations.	DE	Prior to final design approval and project construction.	Sacramento Campus Facilities Planning and Development
Impact GEO-2: Potential to result in substantial soil erosion or the loss of topsoil	**Mitigation Measure LRDP-GEO-1: Conduct Geotechnical Investigation** See text above under Impact GEO-1.	Retain a certified engineering geologist or licensed geotechnical engineer to conduct site-specific geotechnical investigation; document implementation of geotechnical recommendations.	DE	Prior to final design approval and project construction.	Sacramento Campus Facilities Planning and Development
Hazards and Hazardous Materials					
Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable	**Mitigation Measure LRDP-HAZ-2: Prepare a Phase I Environmental Site Assessment** To minimize the risk of encountering unknown contamination during construction under the 2020 LRDP Update, the UC Davis Sacramento	Conduct environmental site assessment and document findings. Conduct remediation activities as necessary.	DE	Prior to final design approval and project construction	Sacramento Campus Facilities Planning and Development and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing		Verification
upset and accident conditions involving the release of hazardous materials into the environment	Campus would prepare a Phase I Environmental Site Assessment before all ground-disturbing construction in areas not previously investigated. A Phase I Environmental Site Assessment would conform with the American Society for Testing and Materials Standard Practice E1527-05 and include at a minimum the following site assessment requirements. • An onsite visit to identify current conditions (e.g., vegetative dieback, chemical spill residue, presence of above- or underground storage tanks). • An evaluation of possible risks posed by neighboring properties. • Interviews with persons knowledgeable about the site's history (e.g., current or previous property owners, property managers). • An examination of local planning files to check prior land uses and any permits granted. • File searches with appropriate agencies (e.g., State Water Board, fire department, county health department) having oversight authority relative to water quality and groundwater and soil contamination. • Examination of historical aerial photography of the site and adjacent properties. • A review of current and historic topographic maps of the site to determine drainage patterns.	Monitor construction site, perform testing, and implement safety procedures, as necessary.	CO	Monitor construction site	Sacramento Campus Facilities Planning and Development and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	• An examination of chain-of-title for environmental liens and/or activity and land use limitations. If the Phase I Environmental Site Assessment indicates likely site contamination, a Phase II Environmental Site Assessment will be performed (also by an environmental professional). A Phase II Environmental Site Assessment would comprise the following. • Collection of original surface and/or subsurface samples of soil, groundwater, and building materials to analyze for quantities of various contaminants. • An analysis to determine the vertical and horizontal extent of contamination (if the evidence from sampling shows contamination). If contamination is uncovered as part of Phase I or II Environmental Site Assessments, remediation per EPA's RCRA regulations in 40 CFR Parts 260–299 will be required, and materials will be properly managed and disposed of prior to construction. Any contaminated soil identified on a project site must be properly disposed of in accordance with Department of Toxic Substances Control regulations in effect at the time. If, during construction, soil or groundwater contamination is suspected, construction activities will cease and appropriate health and safety procedures will be implemented, including the use of appropriate personal			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	protective equipment (e.g., respiratory protection, protective clothing, helmets, goggles).				
Impact HAZ-4: Place project-related facilities on a site that is included on a list of hazardous materials sites, resulting in creation of a significant hazard to the public or the environment	**Mitigation Measure LRDP-HAZ-2: Prepare a Phase I Environmental Site Assessment** See text above under Impact HAZ-2.	Conduct environmental site assessment and document findings. Conduct remediation activities as necessary.	DE	Prior to final design approval and project construction	Sacramento Campus Facilities Planning and Development
		Monitor construction site, perform testing, and implement safety procedures, as necessary.	CO	Monitor construction site	Sacramento Campus Facilities Planning and Development
Hydrology and Water Quality					
Impact WQ-3: Substantial alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation onsite or offsite, substantial increase in the amount of surface runoff in a manner that would result in flooding onsite or offsite, creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage	**Mitigation Measure LRDP-WQ-1: Implement a Subsoil Drainage System to Avoid Damage to Buildings** In the event a sub-soil drainage system is required (as determined by a geotechnical analysis), the system will be installed underground to remove excessive water from the soil and avoid damage to buildings or landscaping. Groundwater from exterior building footings will be conveyed to a sump pump. The effluent will be pumped into the building storm drainage system. Subsoil drainage systems that cannot discharge to the storm sewer by gravity flow will be drained by gravity to sump pumps and will be pumped into the building storm drainage system. Each sump pump will be sized for 100 percent of the estimated design flow. Sump pumps will be connected to the emergency (standby) power	Implement a subsoil drainage system, if required.	DE	Prior to final design approval	Sacramento Campus Facilities Planning and Development

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
systems or provide substantial additional sources of polluted runoff, or alteration of the existing drainage pattern in a manner that would impede or redirect flood flows	system to permit operation during a loss of normal power. Design criteria for the subsoil drainage system will be defined by the geotechnical report**.**				
Noise					
Impact NOI-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from construction activities in excess of applicable standards	**Mitigation Measure LRDP-NOI-1: Implementation of Measures to Reduce Construction Noise** For construction activities associated with future projects under the 2020 LRDP Update, UC Davis will implement or incorporate the following noise reduction measures into construction specifications for contractor(s) implementation during project construction: 1. Construction activities will be limited to the daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday, when feasible. 2. Pile driving will not occur outside of the daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday. 3. All construction equipment used for future projects will be equipped with suitable exhaust and intake silencers in good working order. All construction equipment will be properly maintained and equipped with intake silencers and exhaust mufflers and/or engine shrouds, in accordance with	Include measure in contract specifications; inspect construction site to verify measure is implemented.	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	Sacramento Campus Facilities Planning and Development and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	manufacturer recommendations. Equipment engine shrouds, if used, will be closed during equipment operation. 4. All construction equipment and equipment staging areas will be located as far as possible from nearby noise-sensitive land uses and/or located such that existing or constructed noise attenuating features (e.g., temporary noise wall or blankets) block line of sight between affected noise-sensitive land uses and construction staging areas, to the extent feasible. 5. Individual operations and techniques will be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete offsite instead of onsite) where feasible and consistent with building codes and other applicable laws and regulations. 6. Stationary noise sources such as generators or pumps will be located as far as feasible from noise-sensitive land uses. 7. No less than one week prior to the start of construction activities at a particular location, notification will be provided to academic, administrative, and residential or noise-sensitive uses (such as schools) located within 500 feet of the construction site. 8. For any construction activity that must extend beyond the daytime hours of 7:00 a.m. and 6:00 p.m. on weekdays and Saturdays, and between 9:00 a.m. and 6:00 p.m. on Sundays, the construction contractor for that project will ensure that noise levels			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	at the nearest noise-sensitive land use do not exceed 55 dBA during the hours of 7:00 a.m. to 10:00 p.m. and 50 dBA during the hours of 10:00 p.m. to 7:00 a.m., as feasible. In addition to measures described above, the following measures may also help achieve this performance standard. a. Install temporary noise barriers as close as possible to the noise source or the receptor and located within the direct line-of-sight path between the noise source and nearby sensitive receptor(s). The barrier should be constructed of material that has a surface weight of at least 1 pound per square foot and has an acoustical rating of at least 25 STC (Sound Transmission Class). This can include a temporary barrier constructed with plywood support on a wood frame, sound curtains supported on a frame, or other comparable material. b. Use "quiet" gasoline-powered compressors or electrically powered compressors as well as electric rather than gasoline- or diesel-powered forklifts for small lifting, where feasible. c. Prohibit idling of inactive construction equipment for prolonged periods (i.e., more than 2 minutes). d. Retain a qualified noise specialist to conduct noise monitoring to ensure that noise reduction measures achieve the necessary reductions such that levels at the receiving land uses do not exceed 55			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	dBA during the hours of 7:00 a.m. to 10:00 p.m. and 50 dBA during the hours of 10:00 p.m. to 7:00 a.m.				
Impact NOI-2: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from operations in excess of applicable standards	**Mitigation Measure LRDP-NOI-2a: Reduce noise exposure from emergency generators** Prior to approval of a building permit for individual LRDPs proposing the installation of emergency generators, documentation will be submitted to the University demonstrating with reasonable certainty that noise from testing of the proposed generator(s) would not exceed 55 dBA at the nearest residential land use. Acoustical treatments to reduce noise from generator testing may include, but are not limited to, the following. • Enclosing generator(s) • Incorporating the use of exhaust mufflers or silencers to reduce exhaust noise • Selecting a relatively quiet generator model • Orienting or shielding generator(s) to protect noise-sensitive receptors to the greatest extent feasible • Increasing the distance between generator(s) and noise-sensitive receptors • Placing barriers or enclosures around generator(s) to facilitate the attenuation of noise. In addition, all project generator(s) will be tested only between the hours of 7:00 a.m. and 10:00 p.m. All recommendations from the acoustical analysis necessary to ensure that generator	Provide documentation related to expected generator noise; incorporate acoustical treatments, as necessary.	DE	Prior to final project approval	Sacramento Campus Facilities Planning and Development and SMUD
		Conduct testing during hours specified.	OP	During operation	Sacramento Campus Facilities Planning and Development and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	noise would meet the above requirements will be incorporated into the building design and operations.				
Impact NOI-3: Generation of excessive ground-borne vibration or ground-borne noise levels	**Mitigation Measure NOI-3a: Limit Nighttime Vibration-Generating Construction Activities for In-Street SMUD Work** For in-street construction activities under the SMUD component that take place during nighttime hours, the following buffer distances shall be maintained between vibration-generating equipment and the nearest off-site sensitive use where people may sleep: • Vibratory Roller: 140 feet • Large bulldozer: 78 feet • Small bulldozer: 10 feet Specifically, a vibratory roller and a large bulldozer shall not be used within 140 feet and 78 feet, respectively, of land uses where people sleep during nighttime hours. As a result of these buffer distances, the use of a large bulldozer and vibratory roller likely would not be permitted during nighttime hours along roadway segments developed with residential land uses. Any construction work requiring this equipment would be limited to daytime hours within these distances of residences.	Include measure in contract specifications; SMUD to inspect construction site to verify measure is implemented.	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	SMUD
	Mitigation Measure NOI-3b: Equipment Buffer Distances to Nearby Vibration-Sensitive Structures For in-street construction activities under the SMUD component, vibration levels at the nearest off-site sensitive structures similar to "historic and some old buildings" shall be	Include measure in contract specifications; SMUD to inspect construction site to verify measure is implemented.	DE/CO	During project design; prior to construction and at regular intervals throughout the construction period	SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	limited to 0.25 PPV in/sec, or less, and vibration levels at the nearest "older residential structure" shall be limited to 0.3 PPV in/sec, or less. To ensure these vibration levels are not exceeded, the following buffer distances shall be maintained between vibration-generating equipment (or similar) and the nearest off-site sensitive structures similar to "historic and some old buildings" (with a vibration-related damage criterion of 0.25 PPV in/sec): • Vibratory Roller: 23 feet • Large bulldozer (or similar, such as an excavator): 13 feet • Small bulldozer: 2 feet In addition, the following buffer distances shall be maintained between vibration-generating equipment and the nearest off-site sensitive structures similar to "older residential structures" (with a vibration-related damage criterion of 0.3 PPV in/sec): • Vibratory Roller: 20 feet • Large bulldozer (or similar, such as an excavator): 12 feet • Small bulldozer: 2 feet Once final equipment for the in-street SMUD component construction has been selected, tailored buffer distances based on the size and types of equipment proposed for use (and based on the same damage criteria described above) may be generated and utilized in lieu of the aforementioned buffer distances.			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
Transportation, Circulation, and Parking					
Impact TRA-5: Result in construction activity that could cause temporary impacts on transportation and traffic	**Mitigation Measure LRDP-TRA-5: Prior to the issuance of any grading or building permits, a Construction Traffic Management Plan (TMP) will be prepared to the satisfaction of UC Davis Health and the City of Sacramento Department of Public Works for City-owned roadways** The Construction TMP will include items such as the following. • Preserving emergency vehicle access routes to existing buildings on the Sacramento Campus • Providing truck circulation routes/ patterns that minimize effects on existing vehicle traffic during peak travel periods and maintain safe bicycle circulation • Monitoring for roadbed damage and timing for completing repairs • Preserving safe and convenient passage for bicyclists and pedestrians through/around construction areas • Creating methods for partial (i.e., single-lane)/complete street closures (e.g., timing, signage, location and duration restrictions), if necessary • Identifying detour routes for roadways subject to partial/complete street closures • Identifying temporary UC Davis shuttle stops and detoured shuttle routes if existing stops or routes are affected	Preparation of a construction traffic management plan.	DE	Prior to final project approval	Sacramento Campus Facilities Planning and Development, UC Davis Environmental Planning, and SMUD

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	• Identifying temporary SacRT bus stops and detoured bus routes, if existing stops or routes are affected • Developing criteria for use of flaggers and other traffic controls • Providing a point of contact for nearby residents, Sacramento Campus staff, students, visitors, and other stakeholders to contact to obtain construction information and have questions answered The Construction TMP will be developed so that the following performance standards are achieved throughout project construction. • Maintain emergency vehicle access to all buildings on the Sacramento Campus at all times. • Maintain identified emergency vehicle routes to UC Davis Health medical facilities at all times. Notify appropriate contacts for UC Davis Health and/or emergency responders at least 24 hours prior to any construction-related partial/complete closures that may affect emergency vehicle routes, and provide clear identification of detours when necessary. • Minimize construction traffic during morning and evening peak periods when traffic on local and campus streets is highest • Close (i.e., partially or fully) any construction-related public roadways only during off-peak periods and provide appropriate construction signage, including detour routing			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Table ES-2. Continued

Impacts	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	• Limit detour routing to campus roadways or City collector and arterial roadways, such as Stockton Boulevard and Broadway, to the extent feasible. Include measures to minimize traffic increases on local residential roadways; this may include signage and law enforcement presence during partial/complete closures to discourage through-traffic use of local residential roadways • Clear roadways, sidewalks, crosswalks, and bicycle facilities of debris (e.g., rocks) that could otherwise impede travel and affect public safety, and maintain them in this condition UC Davis will also consider any concurrent construction activity and other active Construction TMPs when reviewing new Construction TMPs for specific LRDP implementation projects. This review will address the effects of simultaneous construction activity.			

Project stage at which implementation of the measure is required:
SS = site selection; DE = detailed project planning or project design prior to project approval; CO = construction; OC = prior to occupancy; OP = operation

Chapter 1
Introduction

This tiered Draft Environmental Impact Report (EIR) evaluates the potential physical environmental impacts associated with development of the Central Utility Plant (CUP) Expansion Project of the University of California (UC or University) Davis Sacramento Campus. This Draft EIR is tiered from the UC Davis Sacramento Campus 2020 Long-Range Development Plan Update Supplemental EIR (2020 LRDP Update SEIR). The following discussion provides an overview of the purpose, focus, and use of this Draft EIR.

1.1 Purpose and Intended Use of the EIR

The purpose of this Draft EIR is to inform university decision-makers, public agencies, and the public of the environmental consequences of implementing the proposed CUP Expansion Project. This Draft EIR has been prepared in accordance with the California Environmental Quality Act (CEQA), the CEQA Guidelines, and the UC guidelines for the implementation of CEQA.

1.2 Lead Agency

The Board of Regents of the University of California (Regents) serves as the lead agency under CEQA for consideration of certification of this SEIR and potential project approval; CEQA Guidelines Section 15367 defines the lead agency as the agency with principal responsibility for carrying out and approving a project. UC Davis Sacramento Campus is part of the University, a constitutionally created entity of the State of California (State), with “full powers of organization and government” (Cal. Const. Art. IX, Section 9). As a constitutionally created State entity, the University considers and provides authority for all land use decisions on property owned or controlled by the University that are used in furtherance of the University’s education purposes.

1.3 Tiering

In accordance with CEQA Guidelines Sections 15152 and 15168 and Public Resources Code (PRC) Section 21094, this environmental analysis is tiered from the 2020 LRDP Update SEIR (State Clearinghouse No. 2020020161). The 2020 LRDP Update is a comprehensive land use plan for guiding physical development on the Sacramento Campus to accommodate projected population and building growth through 2040.

The CEQA concept of "tiering" refers to the evaluation of general environmental matters in a broad program-level EIR, with subsequent focused environmental documents for individual projects that implement the program. CEQA and the CEQA Guidelines encourage the use of tiered environmental documents to reduce delays and excessive paperwork in the environmental review process. CEQA Guidelines Section 15168(d) provides for simplifying the preparation of environmental documents for individual parts of the program by incorporating by reference analyses and discussions that apply to the program as a whole. Where an EIR has been prepared or certified for a program or plan, the environmental review for a later activity consistent with the program or plan should be limited to potentially significant effects on the environment that were not analyzed as significant in the prior EIR, that are susceptible to substantial reduction or avoidance (CEQA Guidelines Section 15152(d)), or were not adequately addressed in the prior EIR (CEQA Guidelines Section 15152(f)).

1.4 Relationship to Long-Range Development Plan

Each campus within the UC system periodically prepares an LRDP to guide campus development in anticipation of projected growth of student enrollment and new UC-added programs. An LRDP is defined as a "physical development and land use plan to meet the academic and institutional objectives for a particular campus or medical center of public higher education" (PRC Section 21080.09(a)(2)). The LRDP establishes the land use patterns and relevant policies that guide the development of campus facilities and infrastructure.

The Regents adopted the Sacramento Campus 2020 LRDP Update after certifying its SEIR in November 2020. The 2020 LRDP Update reflects the growth projections and plans for the Sacramento Campus through 2040. The 2020 LRDP Update projects that by 2040 the campus will have an onsite daily population of 21,200 and campus facilities will grow by 7.07 million gross square feet.

Because this is a tiered EIR, cumulative impacts and other CEQA considerations, such as significant unavoidable impacts, significant irreversible environmental changes, and growth-inducing impacts, were covered in the 2020 LRDP Update SEIR. Cumulative impacts relative to the 2020 LRDP Update are discussed in Volume 1, Chapter 4, of the 2020 LRDP Update SEIR. The 2020 LRDP Update SEIR used growth projections to assess regionally cumulative impacts and compare them to a list of reasonable, foreseeable projects near the Sacramento Campus to assess more localized cumulative impacts. The CUP Expansion Project would not significantly contribute to any new cumulatively significant effects or growth-inducing effects, beyond those already analyzed and identified in the 2020 LRDP Update SEIR. The mitigation measures identified in Sections 3.1 through 3.16 of the 2020 LRDP Update SEIR are still applicable.

1.4.1 Baseline

The baseline of the 2020 LRDP Update SEIR was 2019. This baseline is also used for this tiered EIR. It should be noted that in the air quality and greenhouse gas emissions analysis, the emissions impacts from operation of eight hot-water boilers that were analyzed in the 2020 LRDP Update SEIR have been removed. This is because it was found that the boilers were decommissioned in April 2021 (Olaguez pers. comm.).

1.4.2 Changes since the 2020 LRDP Update

Several projects have been approved and commenced construction since preparation of the 2020 LRDP Update SEIR.

1.4.3 California Hospital Tower Project EIR

In November 2021, the Regents certified the Final EIR (State Clearinghouse Number 2021020515; University of California 2021) for the California Hospital Tower Project. The California Hospital Tower Project EIR evaluated the project-level impacts of a 14-story hospital tower, construction of Parking Structure 5, CUP upgrades, make-ready projects, and demolition of the East Main Hospital Wing on the Sacramento Campus. The CUP upgrades included an analysis of facility upgrades to provide increased capacity, including the addition of three new 2,000-kilowatt emergency generators and three water chillers. The California Hospital Tower Project EIR also analyzed a

revision to the 2020 LRDP Update height restrictions under the "Hospital" land use designation (i.e., revised from 200 feet to 270 feet for areas within 180 feet of the property line). The California Hospital Tower Project Final EIR is described here and incorporated by reference because it included an analysis of equipment and emissions that is applicable to the CUP Expansion Project, including the following:

- Three diesel generators were analyzed at the existing CUP location, which will now be located at the CUP Annex
- Decommissioning of eight chillers and a subsequent change in refrigerants

Although both the 2020 LRDP Update SEIR and the California Hospital Tower Project EIR analyzed some increase in natural gas usage at the CUP, this EIR analyzes all of the natural gas consumption that would result from the CUP Expansion Project at the project level. The California Hospital Tower Project EIR was prepared in accordance with Section 15168 of the CEQA Guidelines and PRC Section 21094. The Final EIR is available online at https://environmentalplanning.ucdavis.edu/california-tower.

1.4.4 Sacramento Ambulatory Surgery Center Project (48X)

In May 2022, the Regents approved the Sacramento Ambulatory Surgery Center (SASC) Project (48X)[1] after consideration of an addendum to the 2020 LRDP Update SEIR (State Clearinghouse Number 2020020161; University of California 2022). This addendum evaluated the impacts of constructing a freestanding ambulatory surgery facility north of Y Street, between 48th and 49th Streets. The SASC Project is four stories and has approximately 250,000 gross square feet of building space. The SASC Project was identified and analyzed as part of the 2020 LRDP Update SEIR, but the size and location of the SASC Project was modified. The size of the SASC Project is within the range of growth that was planned for under the "Ambulatory Care" land use designation of the 2020 LRDP Update. The SASC addendum is described here and incorporated by reference because it included an emissions analysis for equipment that would be installed at the CUP to support the SASC and other projects on the Sacramento Campus. This addendum to the 2020 LRDP Update was prepared in accordance with Section 15168 of the CEQA Guidelines and PRC Section 21094. The addendum is available online at https://environmental planning.ucdavis.edu/current-projects#SASC.

1.4.5 Review and Certification Process

Under CEQA, the lead agency for a project is the public agency with primary responsibility for carrying out or approving the project and implementing the requirements of CEQA. CEQA Guidelines Section 15083 authorizes and encourages an early consultation or scoping process to help identify the range of actions, alternatives, mitigation measures, and significant effects to be analyzed and considered in an EIR and help resolve the concerns of affected regulatory agencies, organizations, and the public. Scoping is designed to explore issues for environmental evaluation, ensuring that important considerations will not be overlooked and concerns that might otherwise go unrecognized will be uncovered. UC Davis prepared a notice of preparation (NOP) (Appendix A) on May 23, 2023, to determine the scope of the environmental impact analyses that would be needed to adequately address the project. The NOP was circulated for a 30-day comment period from May 23

[1] Reflecting its location at the corner of 48th and X Streets.

to June 22, 2023. A summary of the relevant NOP comments is provided at the beginning of each topical section in Chapter 3.

This Draft EIR is being circulated for a 45-day period of review and comment by the public and other interested parties, agencies, and organizations. A virtual public hearing will be held on October 4, 2023, to receive input from agencies and the public on the Draft EIR. The public can register to attend the virtual meeting by clicking on the link below.

- https://environmentalplanning.ucdavis.edu/CUP-Expansion

Copies of the Draft EIR are available on the UC Davis Environmental Planning website for review:

- https://environmentalplanning.ucdavis.edu/CUP-Expansion

Hard copies of the document are available at the following locations:

- UC Davis Health Center, Facilities Planning and Design, 4800 Second Avenue, Suite 3010, Sacramento, CA 95817.
- UC Davis Office of Environmental Stewardship and Sustainability, 436 Mrak Hall on the UC Davis campus, Davis, CA 95616.
- Reserves at Shields Library on the UC Davis campus, Davis, CA 95616.
- Colonial Heights Library, 4799 Stockton Boulevard, Sacramento, CA 95820.

The public review period will conclude at 5:00 p.m. on November 6, 2023. All comments on the Draft EIR should be addressed to:

Heather Davis
Interim Director of Environmental Planning
Campus Planning and Environmental Stewardship
University of California
One Shields Avenue
Davis, CA 95616
environreview@ucdavis.edu

After the close of the public comment period, responses to written and oral comments on environmental issues will be prepared. Consistent with CEQA Guidelines Section 15088(b), commenting agencies will be provided a minimum of 10 days to review the proposed responses to their comments before any action is taken on the Final EIR or project. The Final EIR (consisting of this Draft EIR and the response-to-comments document) will then be considered for certification (in accordance with CEQA Guidelines Section 15090) and approval by the Regents. If the Regents find that the Final EIR is "adequate and complete," the Regents may certify the Final EIR in accordance with CEQA. The rule of adequacy generally holds that an EIR can be certified if:

1. The EIR shows a good-faith effort at full disclosure of environmental information, and
2. The EIR provides sufficient analysis to allow decisions to be made regarding the proposed project, with consideration given to its environmental impacts.

The level of detail contained throughout this tiered Draft EIR is consistent with CEQA Guidelines Section 15151 of the CEQA Guidelines and recent court decisions, which provide the standard of adequacy on which this document is based. The CEQA Guidelines state as follows:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of the environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure. (CEQA Guidelines Section 15151)

CEQA requires that when a public agency makes findings, based on an EIR, the public agency must adopt a reporting or monitoring program for those measures it has adopted or made a condition of the project approval to mitigate significant adverse effects on the environment. The reporting or monitoring program must be designed to ensure compliance during project implementation. The mitigation monitoring and reporting program for the project will be prepared and considered by the Regents in conjunction with the Final EIR review.

1.5 Responsible and Trustee Agencies

Under CEQA, responsible agencies are State and local public agencies other than the lead agency that have the authority to carry out or approve a project or that are required to approve a portion of the project for which a lead agency is preparing or has prepared an EIR. Trustee agencies are State agencies with legal jurisdiction over natural resources affected by a project that are held in trust for the people of California.

The agencies listed below may have responsibility for or jurisdiction over implementation of elements of the project. The list identifies potential permits and other approval actions that may be required before implementation of certain project elements. Chapter 3 of this Draft EIR provides detailed analysis that explores further the potential for the need for responsible agency action.

This Draft EIR and any environmental analysis relying on this Draft EIR are expected to be used to satisfy the CEQA requirements of the listed responsible and trustee agencies. No approvals or permits are required from federal agencies.

1.5.1 State

- California Department of Transportation (Caltrans) (Responsible Agency)—To provide temporary access for construction within Caltrans rights-of-way.
- State Water Resource Control Board (Responsible Agency)—To provide coverage under General Construction and Industrial Storm Water permits.

1.5.2 Local

- Sacramento Metropolitan Air Quality Management District (Responsible Agency)—To comply with stationary-source permitting requirements (e.g., Authority to Construct and Permit to Operate).

- City of Sacramento (Responsible Agency)—Potential approval of roadway, intersection, bike path, and sidewalk improvements as well as approvals/encroachment permits for any new water or sewer connections, stormwater permit, and potential tree removal.
- Sacramento Regional Transit District (Responsible Agency)—Potential encroachment permit for installation of SMUD feeder where work would occur in Light Rail rights-of-way.
- Sacramento Municipal Utility District (Responsible Agency)—Construction of new infrastructure for a 116/21.9kV 40 MVA transformer, and installation of a 40 MVA transmission line underground between SMUD's East City Substation and the new electrical service yard at the CUP.

1.6 Organization of the Draft Supplemental EIR

The content and format of this Draft EIR are designed to meet the requirements of CEQA and the CEQA Guidelines (Sections 15122 through 15132). The Draft EIR is organized into the following chapters:

- **Executive Summary** provides an overview of the environmental evaluation, including impact conclusions and recommended mitigation measures.
- **Chapter 1, Introduction,** describes the purpose, process, scope, and public outreach for this EIR.
- **Chapter 2, Project Description,** describes the location of the project, the project background, existing conditions on the project site, and the nature and location of specific elements of the project.
- **Chapter 3, Existing Environmental Setting, Impacts, and Mitigation,** includes a topic-by-topic analysis of impacts that would or could result from project implementation. The analysis is organized in 16 topical sections. Each section includes a discussion of the environmental and regulatory setting, impact analysis, and mitigation measures.
- **Chapter 4, Alternatives,** describes feasible alternatives to the project, including the No-Project Alternative that describes the consequences of taking no action.
- **Chapter 5, List of Preparers,** identifies preparers of the Draft EIR.
- **Appendices** contain a number of reference items, providing support and documentation of the analyses performed for this report.

Chapter 2

Project Description: Central Utility Plant Expansion

2.1 Project Background

University of California (UC or University) Davis Health, located at Sacramento Campus, is an integrated academic health-care organization, maintaining the historic UC Davis tradition of being guided by a mission of public service in all its endeavors. Serving 6 million residents across 33 counties encompassing 65,000 square miles in northern and central California, UC Davis Health includes the School of Medicine, the Betty Irene Moore School of Nursing, a 646-bed licensed acute care hospital, a National Cancer Institute–designated Comprehensive Cancer Center, and outpatient clinics on the UC Davis Sacramento Campus and in communities throughout the Sacramento region. The hospital is an accredited Level 1 trauma center for both pediatric and adult patients requiring exceptionally high levels of medical care, and it is the only Level 1 trauma center for both adult and pediatric emergencies in the region.

The Sacramento Campus Central Utility Plant (CUP) provides all of the campus' normal power, emergency power, and chilled and hot water for heating and cooling, along with process steam to most campus buildings using natural gas. In order to continue to serve the Sacramento Campus, and achieve the University's sustainability goals, the CUP requires upgrades and expansion, including a new annex building to improve CUP operating efficiency and an underground utility distribution system.

UC is committed to responsible stewardship of its physical resources and demonstrating leadership in sustainable practices. The UC Sustainable Practices Policy, which was updated in July 2023, sets the goal of net zero greenhouse gas (GHG) emissions by 2025 and a path to an 80 percent reduction in onsite natural gas combustion (University of California 2023). The proposed project would position UC Davis Health to decarbonize CUP operations over the long term by initiating the first major phase of conversion of the CUP from producing energy to utilizing electricity provided by the Sacramento Municipal Utility District (SMUD). Pursuant to the UC Sustainable Practices Policy, by 2025, at least 20 percent of the natural gas historically combusted onsite will be biomethane, and at least 40 percent of natural gas will be biomethane by 2030.

This section describes the existing CUP, the improvements to the CUP that have been previously approved, and future improvements that are not a part of the project analyzed in this EIR. Section 2.2 describes the CUP Expansion Project components covered in this EIR.

The CUP Expansion Project covered in this EIR is part of a larger long-term CUP modernization effort, which is planned to occur in phases; that project aims to fully decarbonize and electrify the CUP to support the University's sustainability goals. The first phases of the long-term modernization project were analyzed in the CEQA documentation for the 48X[1] Complex and in the EIR for the California Hospital Tower Project. Construction has begun on the first phases, which are described below in Section 2.2. Future phases of the modernization project, for which planning has not occurred, would be planned and constructed sometime after the expansion project evaluated in this EIR.

[1] Reflecting its location at the corner of 48th and X Streets.

2.1.1 Central Utility Plant Existing Facilities

The Sacramento Campus CUP was constructed in 1998. It provides all of the campus' normal power, chilled and hot water for heating and cooling, and process steam to most campus buildings using natural gas provided by Pacific Gas and Electric Company (PG&E). Emergency power is provided by diesel generators (located at the CUP).

As described in the 2022 Utility Master Plan Update for the UC Davis Health Sacramento campus (AEI 2022), the main components of the existing CUP systems are chilled water, condensed water, and medium-temperature hot water, along with steam systems, a cogeneration turbine, and a plant steam aerator. Natural gas, provided by PG&E, is dedicated to the gas turbine in the cogeneration system and auxiliary steam boilers.

Primary normal power is generated by the cogeneration system at 12.47 kilovolts (kV) at the on-campus CUP. The campus' secondary source of normal power is provided by SMUD from a feeder that runs from the SMUD Mid-City Substation, located near Stockton Boulevard and 34th Street in Sacramento; south along Stockton Boulevard; and east along 2nd Avenue to the CUP. Emergency power is generated on campus at 12.47 kV, with a total capacity of 10 megawatts (MW)/12.5 megavolt amperes (MVA). Five 2 MW/2.5 MVA diesel generators provide emergency power for the CUP and the campus.

The CUP has two 15,000-gallon underground fuel oil storage tanks, which provide backup fuel for the steam boiler plant as well as the centralized emergency diesel generator operation. The combined fuel storage capacity is 30,000 gallons, which can support approximately 32 hours of full-load boiler operation and approximately 430 MW hours of emergency diesel generator operation. This amount of fuel storage provides 72 hours of emergency generator operation for critical hospital loads.

2.1.2 Previously Approved CUP Improvements

The following CUP improvements have independent utility and have already been analyzed and approved in previous CEQA documentation. They are currently under construction on the Sacramento Campus. Because these improvements have already been the subject of CEQA evaluation and have been approved, they are not covered in this EIR.

- **Add CUP capacity to support the 48X Complex—**This entails adding a new chiller within the existing CUP and providing associated upgrades to normal electrical power as well as extending underground chilled and heating water to the 48X Complex. This work, including installing and operating the new 2,380-ton chiller, underground hot-water lines at 48th Street, and emergency power from one generator, was analyzed in an addendum to the 2020 LRDP Update SEIR for the 48X Complex, which was approved in May 2022. Construction is currently in progress and expected to be complete by the end of 2024.
- **Add CUP capacity to support the California Hospital Tower**—This supports near-term growth identified in the 2020 LRDP Update, including the California Hospital Tower, which will be operational by 2030. This work was analyzed in the California Hospital Tower Project EIR. Construction and operation of the equipment that has already been analyzed includes:
    - Extending underground pipelines for cold and hot water at 45th Street.

- Installing and operating three new water chillers and one electric heat pump rated at 10,000 British thermal units (BTUs) per hour.
- Constructing/installing new underground feeders from the CUP to the California Hospital Tower.
- Installing three new 2,000-kilowatt (3,450-horsepower rated) emergency generators. As noted in Chapter 1, these generators were analyzed at the existing CUP location but will now be located at the future CUP Annex.
- Decommissioning three chillers at the existing CUP, transitioning one chiller at the CUP to one with a lower global warming potential (GWP), and installing five new chillers at the CUP, for a total of six operational chillers at the existing CUP with completion of the CUP Expansion Project.

The California Hospital Tower Project EIR was approved in November 2022. Construction of the California Hospital Tower is currently in progress and expected to be complete by 2030, with the CUP expansion components scheduled to be complete by 2029.

2.1.3 Future Phases – Not a Part of the Project Evaluated in this EIR

Future phases of CUP modernization have independent utility and are not reliant on other projects or improvements. Design and construction plans for future phases have not been prepared. An environmental assessment for those components will be prepared at a future date.

Convert the CUP to Mostly Electric Energy

These improvements would support campus growth to 2035 and take further strides toward onsite reductions in natural gas combustion and GHG emissions. New chillers, cold-water pumps, and thermal energy storage tanks and pumps would be installed; a second redundant SMUD feed would be constructed as well.

Convert the CUP to All-Electric Energy

Following the above improvements, the final step in CUP modernization would involve adding air-source heat pumps and electric steam boilers in order to complete the CUP's conversion to all-electric energy and fulfill the commitment to onsite reductions in natural gas combustion and GHG emissions.

2.2 Central Utility Plant Expansion Project

2.2.1 Project Location

The project location is shown in Figures 2-1 and 2-2. As shown in Figure 2-2, the CUP Expansion Project would be located on a 6.41-acre site within the UC Davis Sacramento Campus, which is bounded by V Street on the north, Stockton Boulevard on the west, Broadway to the south, and a residential neighborhood to the east. The existing CUP is bounded on the north and east by 2nd Avenue, on the south by 49th Street, and on the west by the Facilities Support Services building. The existing CUP is located in the "Support" land use category of the 2020 Long-Range Development Plan Update (2020 LRDP Update). The CUP Expansion Project would require a minor land use amendment to the 2020 LRDP Update to convert 3.17 acres of land designated for "Education, Research, and Housing" to "Support Space."

2.2.2 Goals and Objectives of the CUP Expansion Project

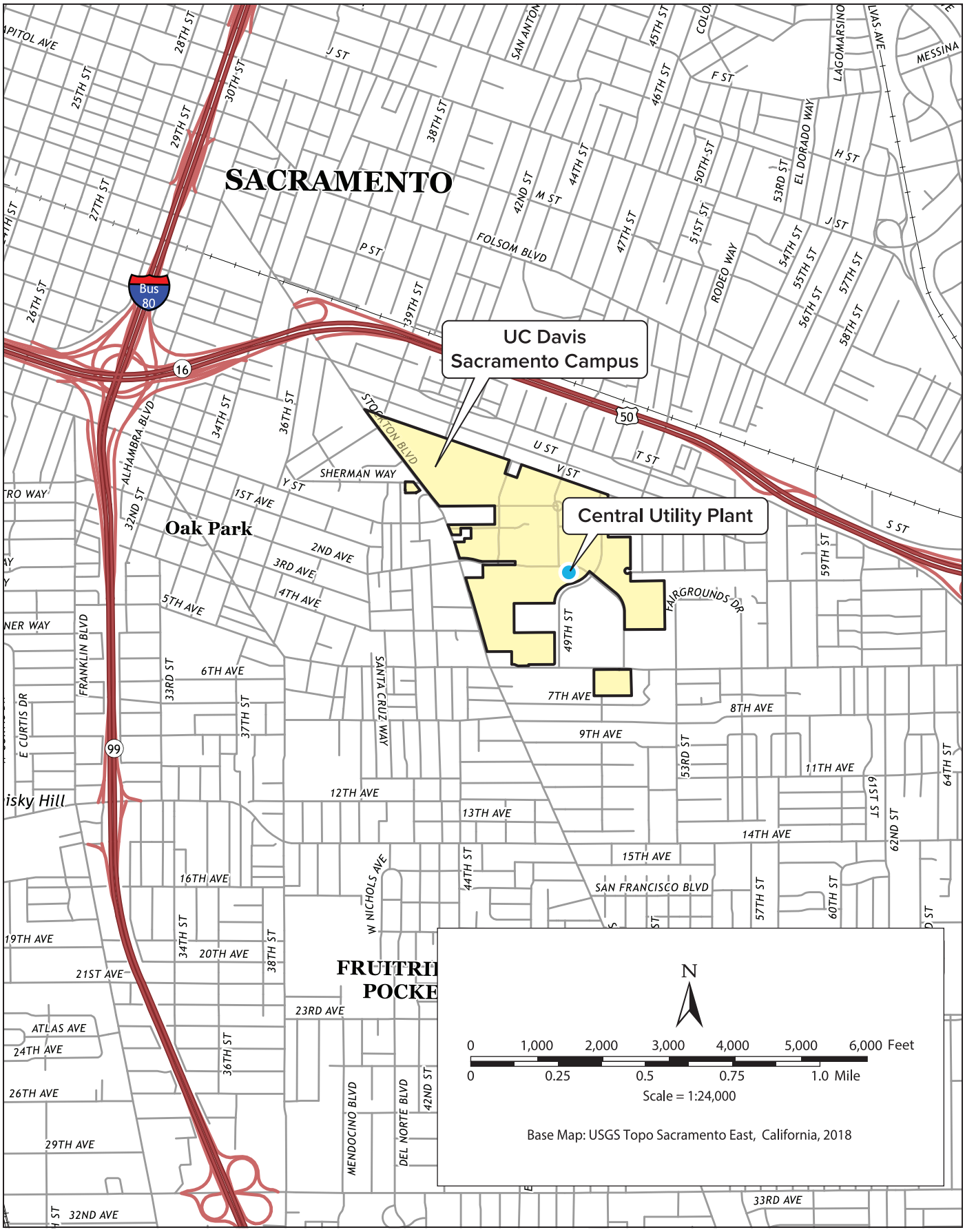
UC Davis has identified the following objectives for the proposed CUP Expansion Project:

- Increase the resiliency of utilities in the event of a utility outage to maintain care for the community in the Sacramento region.
- Comply with Health-Care Access and Information (HCAI) standards and requirements for health-care facilities.
- Provide the utility load needed for campus growth, including the California Hospital Tower and 48X Complex.
- Accommodate campus growth through 2035.
- Further campus compliance with the UC Sustainable Practices Policy, including initiation of development of a more efficient operating utility plant to reduce GHGs and set the Sacramento Campus on a path to carbon-free operations.
- Demolish outdated spaces to achieve seismic safety and remove buildings that cannot be operated efficiently or renovated.

2.2.3 Sacramento Campus Growth

The UC Davis Health main hospital is the primary service provider for the growing Sacramento region. Between June 2021 and June 2022, UC Davis Health handled 954,238 clinic/office visits, 31,953 admissions, and 83,885 emergency room visits (UC Davis Health 2023).

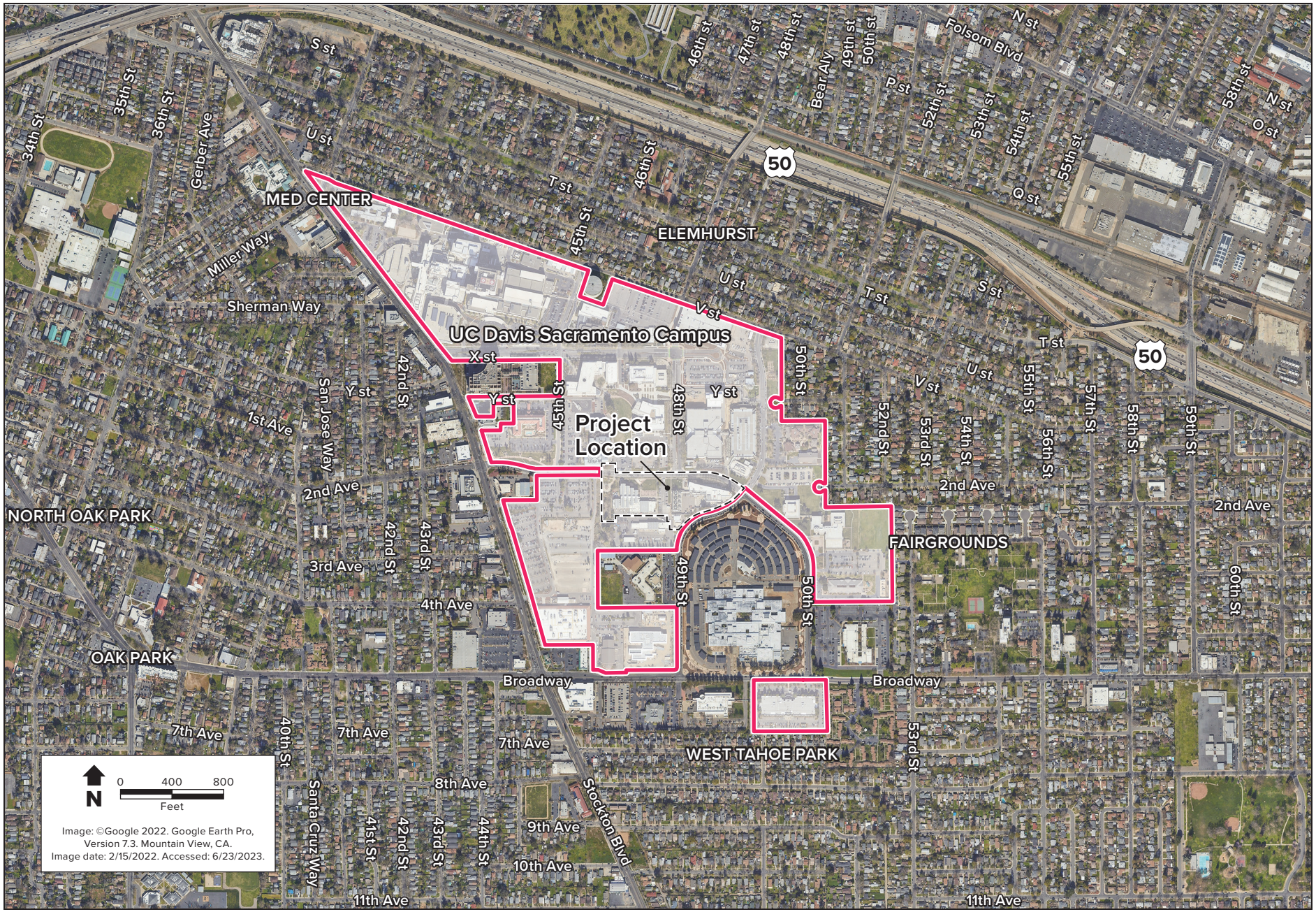
According to the 2020 LRDP Update SEIR, UC Davis Sacramento Campus building space will increase to approximately 7.07 million gross square feet (gsf); the daily onsite population is anticipated to increase to 21,200 by 2040. Planned campus growth includes many new buildings and building renovations, including two large projects. The California Hospital Tower will be a new state-of-the-art, 14-story hospital connected to the existing hospital; the environmental document for this project was approved in November 2021 (UC Davis 2021) and construction started in 2022. The Sacramento Ambulatory Surgery Center (SASC, also referred to as the 48X Complex) is a planned four-story, freestanding ambulatory surgery facility; the environmental document was approved in May 2022 (UC Davis 2022) and construction started in 2022.



Graphics ... 103838 (09-14-2023) JC

UCDAVIS

Figure 2-1
Project Vicinity



Graphics ... 104689 (09-14-2023) JC

UCDAVIS

Figure 2-2
Project Location

Other projects planned for construction prior to 2040 on the Sacramento Campus include a new eye clinic, a cancer center expansion, two new mind labs, a wellness building, a future medical office building, research-and-development space, and several parking garages.

Aggie Square Phase I is a planned district on the southeast portion of the campus that will include three new high-rise buildings for education, technology, and research as well as residential uses, community space, and parking. However, Aggie Square is being developed with independent utility and not connected to the CUP.

2.2.4 Project Components

The components of the CUP Expansion Project include both make-ready projects and CUP expansion construction and operation. The components are detailed below and shown in Figures 2-3, 2-4, and 2-5a and 2-5b. Figure 2-6 shows the change in CUP equipment from existing conditions to after project conditions.

Make-Ready Projects

To prepare for construction and operation of the project components described below, several make-ready projects would be required prior to initiation of the CUP Expansion Project. These include an extension of infrastructure to the site, transportation improvements, and site preparation and partial removal of the Facilities Support Services Building (FSSB), including foundation work for the future CUP Annex.

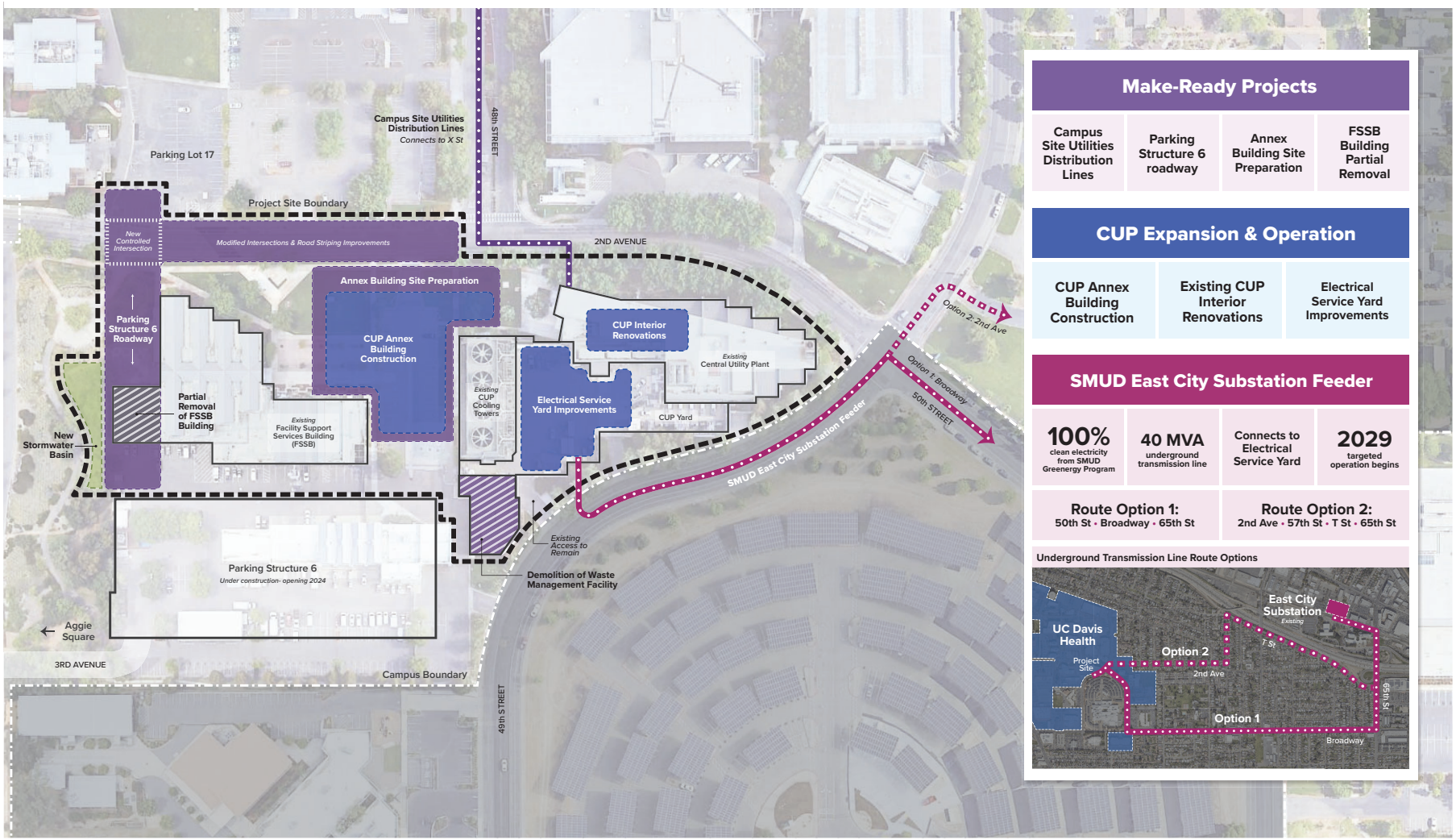
Site Infrastructure – Campus Site Utilities Distribution Lines

New medium-voltage lines for normal and emergency power on campus, along with lines for chilled water and hot water, would be extended from the Central Plant. These utilities would extend underground from 2nd Avenue to the corner of 45th and X Street.

Transportation Improvements – Parking Structure 6 Roadway

Parking Structure 6 (PS6) is scheduled for completion in 2024. PS6 would have access to 2nd Avenue from its northeast corner and 3rd Avenue from its southwest corner. Access to 2nd Avenue from the northeast corner through Parking Lot 20 would be restricted to right-in/right-out movements only when PS6 opens (Figure 2-4).

To prepare for construction of the CUP Annex and maintain continuous access to PS6 from 2nd Avenue, a new roadway on the west side of the FSSB would be constructed (Figure 2-4). This would allow the CUP Annex to be constructed without disturbing access to PS6 when Parking Lot 20 is demolished (see *Annex Building Site Preparation*, below). The northeast access point to 2nd Avenue for PS6 would be relocated to the northwest corner of PS6; the existing access point to 3rd Avenue on the southwest corner would remain. The new roadway would be directly west of the FSSB, with a fully signalized, three-way intersection on 2nd Avenue providing full access (i.e., all turn movements would be permitted). The new roadway would have three travel lanes. At the intersection with 2nd Avenue, the new roadway would have one southbound lane for traffic entering PS6 and northbound left-turn and right-turn lanes for exiting traffic. Traveling south from the 2nd Avenue intersection, the center lane would transition from a northbound left-turn lane for exiting traffic to a switchable lane (i.e., a second entrance lane into PS6 during the morning that would switch to a second exit lane

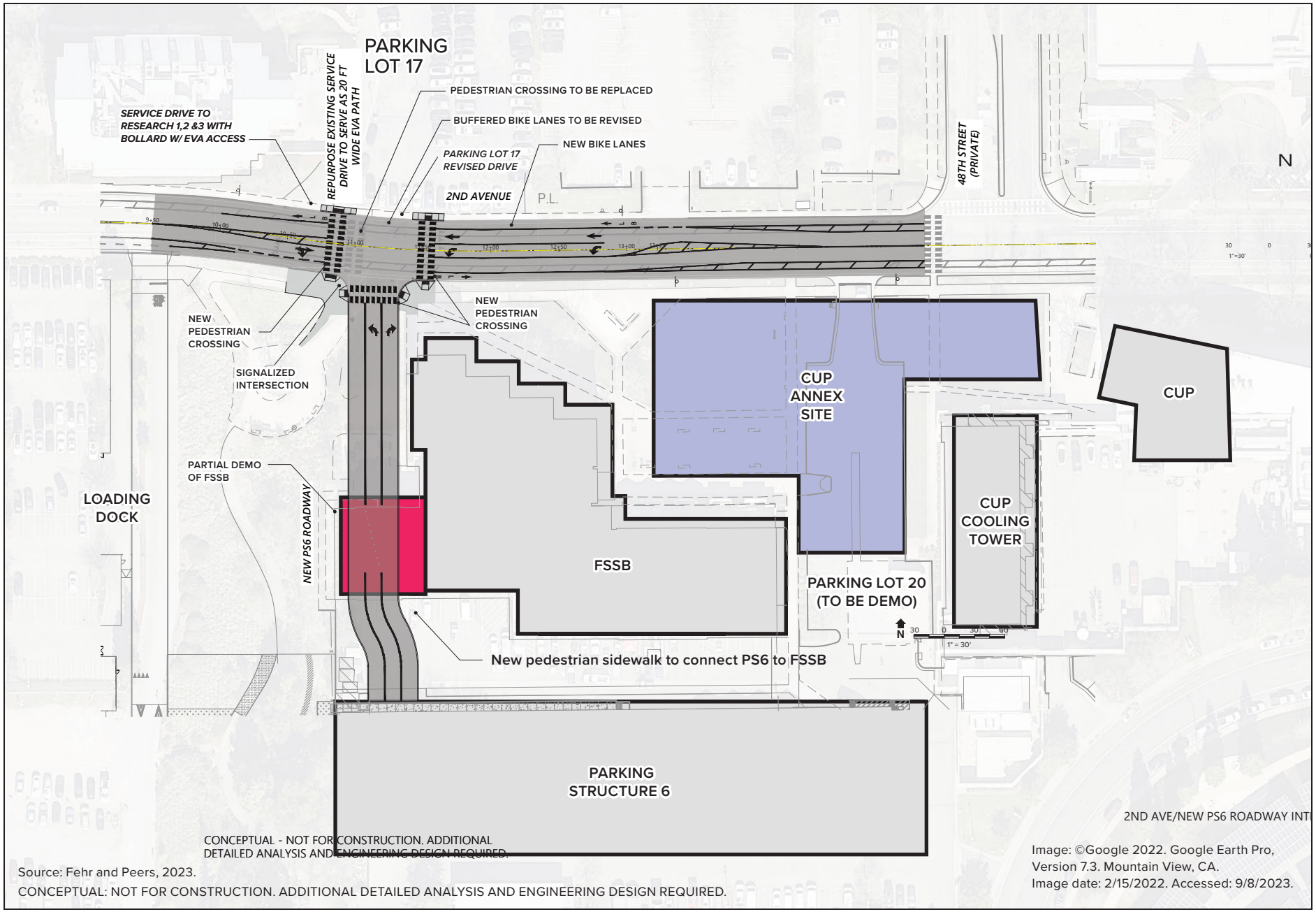


Source: UC Davis Health, 2023.

Graphics ... 103838 (09-14-2023) JC

UCDAVIS

Figure 2-3
Proposed Site Plan



Source: Fehr and Peers, 2023.

CONCEPTUAL: NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Graphics ... 104689 (09-14-2023) JC

UCDAVIS

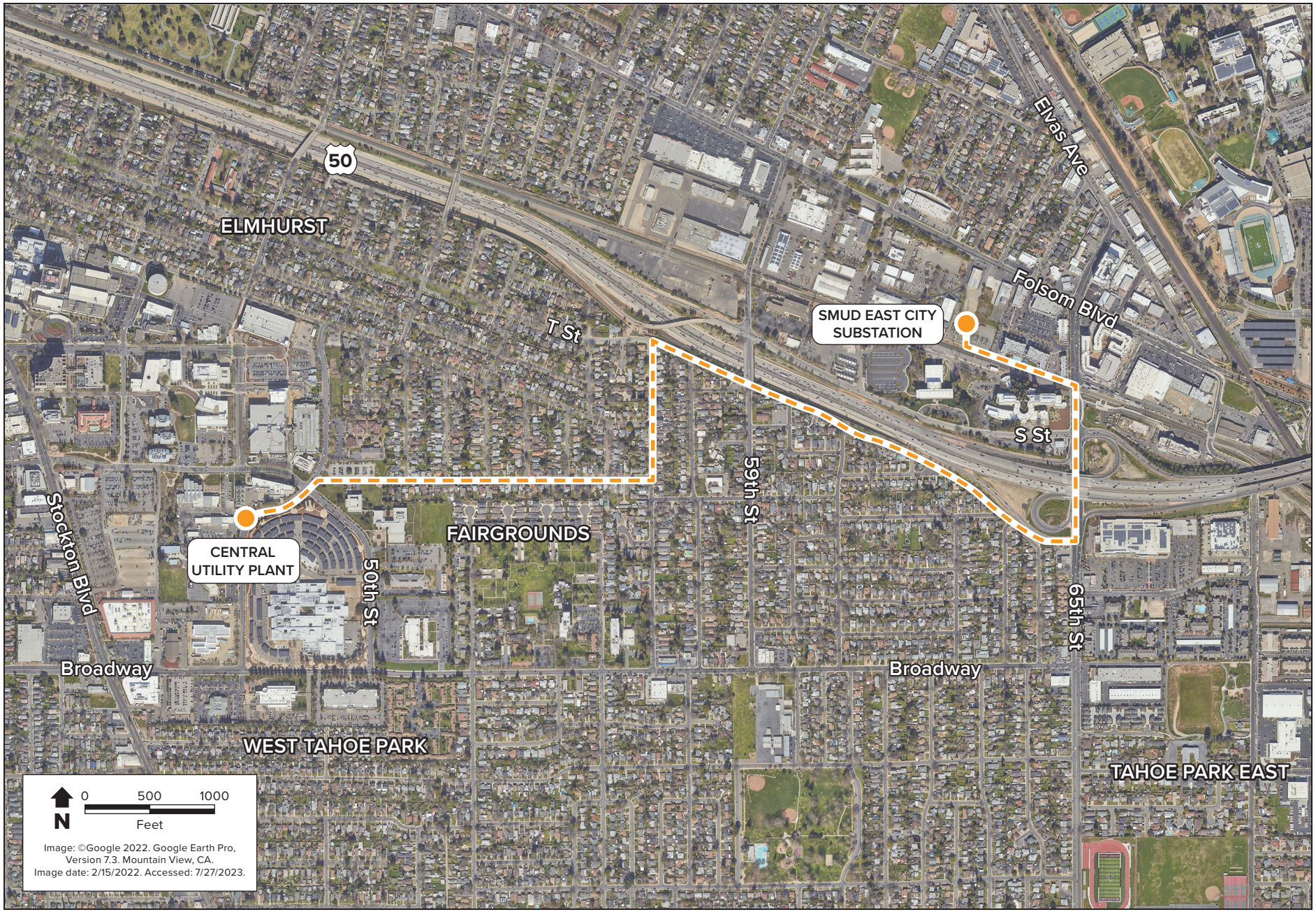
Figure 2-4
Transportation Improvements



Graphics ... 104689 (09-15-2023) JC

UCDAVIS

Figure 2-5a
SMUD Feeder Route 1



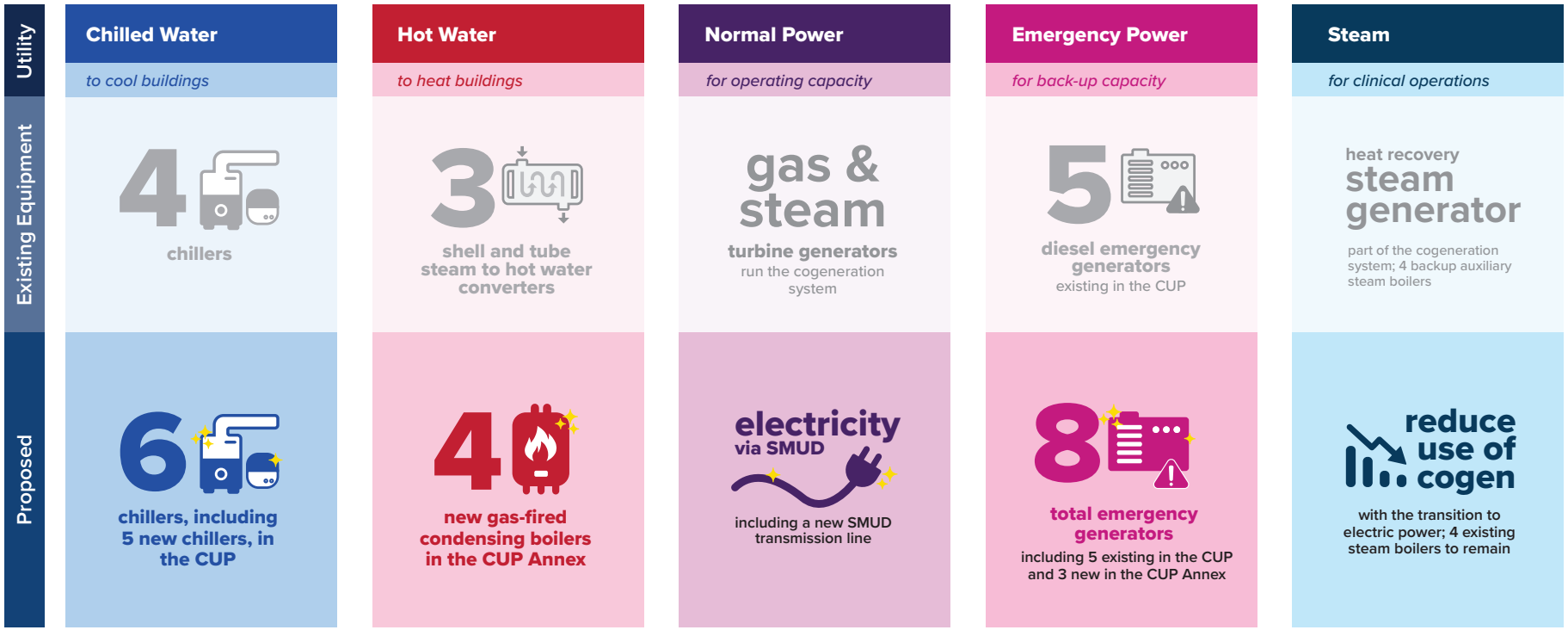
Graphics ... 104689 (09-15-2023) JC

UCDAVIS

Figure 2-5b
SMUD Feeder Route 2

Central Utility Plant Expansion Project

Utility Equipment Before and After Expansion Project



Source: UC Davis Health, 2023.

Graphics ... 103838 (09-14-2023) JC

UCDAVIS

Figure 2-6
CUP Expansion Utilities

from PS6 during the afternoon). A new sidewalk would be added on the east side of the new PS6 roadway to provide a continuous pedestrian connection between 2nd Avenue and PS6 along the west side of the FSSB. The final location of this sidewalk would be determined during the design phase.

As part of the new intersection, a westbound left-turn lane on 2nd Avenue would be striped to serve movements to the new PS6 roadway. The existing pedestrian crossing on 2nd Avenue would be relocated about 15 feet west to accommodate the new PS6 roadway. In addition, access to the service roadway for Research Buildings 1, 2, and 3 on the north side of 2nd Avenue would be converted to emergency vehicle access (EVA) only with the addition of removable bollards to restrict access. To maintain service vehicle access to Research Buildings 1, 2, and 3, service vehicles would be routed through Parking Lot 17. New parking striping within Parking Lot 17 may be necessary for the proposed service vehicle circulation. No additional parking stalls would be added as part of this modification.

Southwest of the proposed PS6 roadway/2nd Avenue intersection, a 15-foot-wide pedestrian pathway would connect a plaza in the campus major open space area to 2nd Avenue. The new PS6 roadway would intrude slightly into the existing pathway. Therefore, the pathway would be widened to maintain a 15-foot-wide pedestrian path between the plaza and the crosswalk on the west side of the new intersection.

FSSB Building Partial Removal

Implementing the PS6 roadway and CUP Annex would require demolishing a two-story, 4,600 gsf portion of the FSSB on the southwest corner that currently serves as the Gross Anatomy Lab. The lab would be relocated to another space on campus (i.e., Aggie Square) in early 2025. The structural steel for the main building at the FSSB and the Gross Anatomy Lab would be separated by a concrete masonry unit (CMU). After demolishing the Gross Anatomy Lab, the split-face CMU walls would remain, serving as an exterior wall. The chilled water and hot water serving the existing FSSB would be relocated at the south end of the proposed CUP Annex. Large utilities on 2nd Avenue would be protected throughout the construction period.

Waste Management Facility Demolition

In order to provide access to the project site from 49th Avenue, the existing Waste Management Facility building will be demolished. The site is approximately 2,342 square feet and consists of a cinderblock wall that surrounds hazardous waste storage containers. This facility is no longer needed on the Sacramento Campus.

Annex Building Site Preparation

In preparation for the CUP Annex, the area in front of the FSSB, including the courtyard and Parking Lot 20, would be demolished. A new temporary walkway to reroute visitor traffic outside of the construction area would be provided. Site fencing would be built around the area between the FSSB and the Central Plant to allow for the rerouting of site utilities as well as foundation work and shoring for the CUP Annex.

CUP Expansion Project Construction and Operation

After make-ready work is complete, construction at the existing CUP and the expansion site would include remodeling the control room, including Americans with Disabilities Act improvements;

routing new underground utilities for electricity and diesel fuel; and demolishing unused CUP yard walls to complete new roadway connections, pavement work, and landscaping. The CUP Annex would be constructed, new diesel tanks would be installed in the existing CUP yard, and new transformers and switchgear would be installed in the electrical yard. Finally, a new replacement well (see below for details) and supporting structure would be installed and connected to the existing water infrastructure.

Annex Building

As stated above, the southwest corner of the FSSB would be demolished, as well as existing landscaping, sidewalks, utilities, and a stormwater system, to clear way for the new CUP Annex. Construction of the CUP Annex would require a roadway configuration that would allow ingress and egress at PS6. A new pedestrian pathway would be added from the west end of PS6 to the new west entry to the FSSB (Figure 2-4).

The CUP Annex would be a two-story, 40,000 square foot, approximately 40-foot-tall structure with a partial basement. The basement would house pumps and large water pipes, with improved access to a utility loop and future tie-in for the chiller building. The building itself would house the CUP operator's administrative offices, condensing boilers for hot water, the normal-power switchgear room, and motor control centers. In addition, the CUP Annex would house three emergency generators and diesel fuel tanks. The second floor would house the emergency system operators and server equipment, emergency distribution switchgear, and backup batteries.

The roof height would be approximately 40 feet above ground level, which would leave ample height for rooftop equipment, visual screening devices, additional equipment storage, and solar panels.

The CUP Annex is proposed for a location west of the three-story FSSB and east of the existing CUP cooling towers and PS6 driveway (Figure 2-3). The CUP Annex is envisioned as a building, in addition to the existing CUP, with major industrial equipment components that would be assembled as needed over a span of approximately 20 years. Equipment would include large tanks and other large pad and rooftop equipment. The annex would be constructed to maintain the existing CUP's reliability for uninterrupted service to the Sacramento Campus and main hospital. With the CUP Annex in place, the facility can expand in the future to incorporate future technologies as they are developed, providing longevity and resiliency as well as new opportunities for sustainability on the Sacramento Campus.

Hot Water for Heating

Although the heat recovery chillers provide most campus heating, a supplemental heat source would be needed in the winter. Four new 10-million-BTU gas-fired condensing boilers would be installed in the new CUP Annex. The existing steam boilers and hot-water converters would remain in the existing CUP to provide a backup heat source for the Sacramento Campus.

The temperature of hot water for campus heating at both the existing CUP and the new CUP Annex would be reduced from 220 degrees Fahrenheit to 160 degrees Fahrenheit.

Emergency Power – Three New Generators

Implementation of the project would not change emergency generator use. However, three new diesel-powered emergency generators would be installed at the CUP Annex.

Electrical Service Yard

A new electrical service yard needs to be constructed to house electrical service equipment for the Sacramento campus. The new service yard would be located within the boundaries of the existing CUP yard, and would be walled off and accessible to the south along 49th Street. The new service yard would have the following dedicated equipment:

- 21.9 kV main service switchgear and circuit breakers;
- 12.47 kV secondary switchgear with main, tie, and feeder circuit breakers;
- Two 40 MVA oil-filled power transformers; and
- Service capacitor banks.

Other Utilities

The CUP Annex would conflict with existing storm drains as well as systems for domestic and fire water, including mechanical and irrigation piping. These utilities would be rerouted. Surface improvements would include asphalt paving, landscaping, curb-and-gutter work, and concrete hardscape work. A new sewer lateral to serve the CUP Annex would connect to an existing manhole south of the hospital utility loop. A landscaped bioswale would be constructed within the major campus open space area in order to reduce stormwater runoff for the project.

New SMUD Feeder for Normal Power

UC Davis Health plans to eliminate dependence on gas and steam turbines for primary energy production and transition to electrical power from SMUD. To accomplish this, the existing normal-power service would need to be expanded. This project component would include construction of new infrastructure for a 116/21.9 kV, 40 MVA transformer and installation of a 40 MVA underground transmission line between SMUD's East City Substation and the new electrical service yard at the CUP. This installation would also require new 21 kV, 1,200-ampere switchgear; new parallel conductors; new manholes; and a new circuit breaker at the CUP. This new service would be from SMUD's East City Substation and delivered to campus from one of two potential routes, which are being evaluated in this EIR. The routes are shown in Figures 2-5a and 2-5b.

- Route 1: The transmission line would extend from SMUD's East City Substation at 6180 Folsom Blvd in Sacramento, then continue east along the railroad tracks and south on 65th Street to Broadway. The line would then run along Broadway west to 59th Street and north to the new electrical service yard at the CUP.
- Route 2: The transmission line would extend from SMUD's East City Substation at 6180 Folsom Blvd in Sacramento, then continue east along the railroad tracks and south on 65th Street to T Street. The line would then continue west along T Street, south at 57th Street, and west along 2nd Avenue to the new electrical service yard at the CUP.

To install the new SMUD transmission line, construction equipment and material would be staged, generally, within the existing right-of-way. Although offsite staging areas have not yet been identified, the contractor would locate such areas, based on availability at the time. It is assumed that any offsite staging areas would be within 1 mile of the project site. During construction, access to the project site would be maintained. Temporary road closures and detours could occur during construction; these would vary in location and duration according to construction requirements. In

addition, construction activities would occur during daylight hours and would not require nighttime lighting.

This service would be targeted for operation by 2027. Pursuant to the UC Sustainable Practices Policy, the Sacramento Campus is required to obtain 100 percent clean electricity (Greenergy) from SMUD beginning in 2025.

Several existing roof drain leaders on the north side of the FSSB would be relocated, and existing piping and inlets within the footprint of the CUP Annex would be removed. A new inlet would be installed on the north side of the hospital utility loop to allow for the existing system to be rerouted.

A new well would be installed to replace Well #2, which was decommissioned during construction of PS 6. The new well would be used only in an emergency (e.g., if the campus is cut off from the City of Sacramento's water system). The well would be part of an isolated system and connected only to the cooling tower. Because this well would be used only for emergencies and would replace Well #2, which served the same purpose, this new well would not result in an increase in the use of groundwater.

Construction Sequencing

Table 2-1 shows the approximate construction timing for CUP Expansion Project components.

Table 2-1. Construction Sequencing

Project Component	Approximate Start Date (Month, Year)	Approximate End Date (Month, Year)
Make-Ready: Site Infrastructure	January 2025	August 2025
Make-Ready: FSSB Partial Removal	January 2025	August 2025
Make-Ready: Roadway Improvements	June 2024	October 2024
Annex Building	August 2025	November 2029
CUP Renovations	June 2026	November 2029
Additional CUP Annex Renovations	June 2026	October 2029
SMUD Component*	2025	2029

*The dates for construction of the SMUD component are currently unknown; it was assumed in the analysis that it would occur for two years between 2025 and 2029.

2.3 Anticipated Approvals and Permits

The Regents would be the lead agency under CEQA and would approve the project. UC Davis would lead coordination with external agencies such as the City of Sacramento, SMUD, and other regulatory and utility providers. UC Davis would also lead coordination with neighborhood and community groups. The following agencies may be required to issue permits or approve certain aspects of the project:

- **State Water Resource Control Board (Responsible Agency).** To provide coverage under the General Construction Stormwater Permit.

- **Sacramento Metropolitan Air Quality Management District (Responsible Agency).** To comply with stationary-source permitting requirements (e.g., Authority to Construct and Permit to Operate).
- **City of Sacramento.** Potential approval of roadway, intersection, bike path, and sidewalk improvements as well as approvals/encroachment permits for any new water or sewer connections, stormwater permit, and potential tree removal.
- **California Department of Transportation (Responsible Agency).** Potential encroachment permit for installation of SMUD feeder where work would occur in a Caltrans rights-of-way.
- **Sacramento Regional Transit District(Responsible Agency).** Potential encroachment permit for installation of SMUD feeder where work would occur in Light Rail rights-of-way.
- **Sacramento Municipal Utility District (Responsible Agency).** Construction of new infrastructure for a 116/21.9kV 40 MVA transformer, and installation of a 40 MVA transmission line underground between SMUD's East City Substation and the new electrical service yard at the CUP.

Chapter 3

Existing Environmental Setting, Impacts, and Mitigation

Chapter 3 of this Draft Environmental Impact Report (Draft EIR) evaluates the potential environmental impacts associated with implementation of the proposed Central Utility Plant (CUP) Expansion Project. As noted in Chapter 1, when certified, this EIR, along with the 2020 Long-Range Development Plan Update Supplemental EIR (2020 LRDP Update SEIR) and addenda, if any, will serve as the programmatic environmental document for overall expected growth as well as the CUP Expansion Project; it will also be used for tiering purposes when implementing the 2020 LRDP Update. This chapter is divided by environmental resource category; each resource category is organized to provide an integrated discussion of the existing environmental conditions (including regulatory setting and environmental setting), potential environmental effects (including direct and indirect impacts, as needed), and measures to reduce significant effects, where feasible.

Cumulative and growth-inducing impacts are discussed in Volume I of the 2020 LRDP Update SEIR, Chapters 4, *Cumulative Impacts*, and 5, *Other CEQA Sections*, respectively.

3.0 Introduction to the Analysis

As required by California Environmental Quality Act (CEQA) Guidelines Section 15126.2, this SEIR identifies and focuses on the significant direct and indirect environmental effects of the project. Short-term effects are generally those associated with construction, and long-term effects are generally those associated with operation of the project. This chapter addresses the environmental setting, environmental impacts, and mitigation measures associated with the project in relation to the following resource categories:

- Section 3.1, *Aesthetics*
- Section 3.2, *Air Quality*
- Section 3.3, *Biological Resources*
- Section 3.4, *Archaeological, Historical, and Tribal Cultural Resources*
- Section 3.5, *Energy*
- Section 3.6, *Geology, Soils, and Seismicity*
- Section 3.7, *Greenhouse Gas Emissions*
- Section 3.8, *Hazards and Hazardous Materials*
- Section 3.9, *Hydrology and Water Quality*
- Section 3.10, *Land Use*
- Section 3.11, *Noise*
- Section 3.12, *Population and Housing*
- Section 3.13, *Public Services and Utilities*
- Section 3.14, *Recreation*
- Section 3.15, *Transportation and Circulation*
- Section 3.16, *Utilities and Service Systems*

Sections 3.1 through 3.16 follow the same general format.

- **Regulatory Setting** presents laws, regulations, plans, and policies that are relevant to each resource category and includes any relevant updates since the 2020 LRDP Update. Regulations originating from the federal, State of California (State), University of California (UC or University), and regional and local levels are each discussed where applicable. Please see the discussion under *University of California Autonomy,* below, for information regarding the University's autonomy with respect to land use policies and municipal regulations.
- **Environmental Setting** presents the existing environmental conditions on the project site and in the surrounding area as appropriate, in accordance with CEQA Guidelines Section 15125. The 2020 LRDP Update SEIR used 2019 as the baseline year to reflect existing environmental conditions, as does this tiered EIR. The geographic extent of the study area differs among resources, depending on the locations where impacts would be expected. For example, air quality impacts are assessed for the air basin (macroscale) as well as the site vicinity (microscale), whereas aesthetic impacts are assessed for the project area/vicinity.
- **Environmental Impacts and Mitigation Measures** identifies the thresholds of significance used to determine the level of significance of the environmental impacts for each resource category, in accordance with the CEQA Guidelines Sections 15126, 15126.2, and 15143. The thresholds of significance used in this SEIR are based on the checklist presented in Appendix G of the CEQA Guidelines, best available data, applicable regulatory standards of relevant public agencies, and the 2020 LRDP Update SEIR. The thresholds may also reflect local policies adopted for the purpose of avoiding or reducing an environmental impact, particularly for impacts that may affect off-campus resources, even if UC Davis is not bound by such policies; please see the *University of California Autonomy* section, below. The level of each impact is determined by comparing the effects of the project to the environmental setting baseline and the listed thresholds. Key methods and assumptions used to frame and conduct the impact analysis as well as issues or potential impacts not discussed further (issues for which the project would have no impact) are also described.

As stated in Section 1.4, *Relationship to Long-Range Development Plan,* the 2020 LRDP Update SEIR was certified in November 2020. The SEIR contains programmatic analysis of all future projects that would be built on the campus through 2040 and includes mitigation measures that could apply to new projects on the campus. Where appropriate, existing mitigation measures for the LRDP are included in this EIR and labeled accordingly. For example, Mitigation Measure LRDP-AQ-1a from the 2020 LRDP Update SEIR would reduce impacts associated with the CUP Expansion Project and is therefore included in Section 3.2, *Air Quality*. New mitigation measures developed specifically for the CUP Expansion Project are labeled according to their impact number and do not include "LRDP" in their titles. Mitigation Measure AQ-2, for example, is a new mitigation measure associated with Impact AQ-2 of the CUP Expansion Project.

The summary of impacts by component identifies where impacts may occur during one or more phases of the project and further identifies where mitigation measures may be required during one or more phases of the project. This would enable UC Davis to make findings for the make-ready component in advance of the rest of the project. The impact statement identifies the level of significance of the impact resulting from the project as a whole. The abbreviations are used in these summary tables are the same as in the *Executive Summary* table.

NI = no impact

LTS = less than significant

S = significant

SU = significant and unavoidable

An example is shown below. The discussion that follows the impact summary includes the substantial evidence supporting the impact significance conclusion.

Impact BIO-1: Disturbance of vegetation-nesting migratory birds and raptors, including Swainson's hawk and white-tailed kite (significant and unavoidable, less than significant with mitigation, less than significant, no impact)

Summary of Impact BIO-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects			
CUP Expansion			
SMUD Component			
Whole Project			

NI = no impact; LTS = less than significant; S = significant; SU = significant and unavoidable.

The EIR must describe any feasible measures that could avoid, minimize, rectify, reduce, or compensate for significant adverse impacts; the measures are to be fully enforceable through incorporation into the project (Public Resources Code Section 21081.6[b]). Mitigation measures are not required for effects that are found to be less than significant. Where feasible mitigation for a significant impact is available, it is described following the impact. Each identified mitigation measure is labeled numerically to correspond with the number of the impact that would be mitigated by the measure. Where sufficient feasible mitigation is not available to reduce impacts to a less-than-significant level, or where the Board of Regents of the University of California lacks the ability to ensure that the mitigation is implemented when needed, the impacts are identified as remaining "significant and unavoidable."

3.0.1 Terminology Used in the EIR

This EIR uses the following terminology to describe environmental effects of the project:

Less-than-Significant Impact: A project impact is considered less than significant when it would not exceed the threshold of significance and, therefore, would not cause a substantial change in the environment (i.e., no mitigation required).

Less than significant with Mitigation Impact: An impact is less than significant with mitigation if there is an environmental effect that may cause a substantial adverse change in the environment; however, implementation of one or more mitigation measure can reduce the severity of the impact to a less-than-significant level.

Significant Impact: A project impact is considered significant if it results in a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of project effects in the context of specified significance criteria. Mitigation measures and/or project alternatives are identified to reduce these effects on the environment where feasible.

Significant and Unavoidable Impact: A project impact is considered significant and unavoidable if it would result in a substantial adverse change in the environment that cannot be feasibly avoided or mitigated to a less-than-significant level if the project is implemented. If a lead agency proposes to approve a project with significant unavoidable impacts, it must adopt a statement of overriding considerations to explain its actions (CEQA Guidelines, Section 15093[b]).

Cumulative Impacts: According to CEQA, "cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). CEQA requires discussion of cumulative impacts when the "project's incremental effect is cumulatively considerable... [or] ... provide a basis for concluding that the incremental effect is not cumulatively considerable" (CEQA Guidelines Section 15130 [a]).

Mitigation Measures: CEQA Guidelines Section 15370 defines *mitigation* as follows:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree of magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

3.0.2 University of California Autonomy

UC Davis is part of the University of California, a constitutionally created entity of the State of California, with "full powers of organization and government" (Cal. Const. Art. IX, Section 9). As a constitutionally created State entity, the University is not subject to municipal regulations of surrounding local governments, such as the City of Sacramento's *2035 General Plan* (City of Sacramento 2015) or land use ordinances, for uses on property owned or controlled by the University that are in furtherance of the University's education purposes. Although there is no formal mechanism for joint planning or the exchange of ideas, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

The Sacramento Campus seeks to maintain an ongoing exchange of ideas and information and pursue mutually acceptable solutions for issues that confront both the campus and its surrounding community. To foster this process, UC Davis participates and communicates with the City of Sacramento, Sacramento County, and community organizations and sponsors of various meetings and briefings to keep local organizations, associations, and elected representatives apprised of ongoing campus planning efforts and consider community input.

3.1 Aesthetics

This section describes the regulatory and environmental setting for aesthetics in the area for the Central Utility Plant (CUP) Expansion Project, analyzes effects on aesthetic resources that would result from implementation of the CUP Expansion Project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

No comments specific to aesthetics were received during the notice of preparation (NOP) comment period.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the 2020 Long-Range Development Plan Update Supplemental Environmental Impact Report (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.1.1 Existing Conditions

Regulatory Setting

Section 3.1 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for aesthetic resources. The following discussion summarizes Section 3.1.1 of the 2020 LRDP Update SEIR and applicable updates since 2019.

University of California

As noted in Section 3.0.2, *University of California Autonomy*, the University of California (UC or University), as a constitutionally created State of California (State) entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the UC that are in furtherance of its educational purposes. However, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

UCDMC Campus Standards and Master Specifications Design Requirements

The UC Davis Health System publication *UCDMC Campus Standards and Master Specifications Design Requirements* (UC Davis Health System 2014) applies to all new construction, including entirely new buildings as well as remodeling or additions to existing buildings, on the UC Davis Sacramento Campus. The guide describes a vision for creating a physical environment that supports the University's mission, vision, and values as well as addresses the principles of the physical design framework. The guide covers green building requirements, accessibility, sustainable materials, products and equipment, landscape design, design considerations for existing trees and planting selections, lawn areas, parking/circulation, sustainability and energy efficiency, and other topics.

UC Davis Sacramento Campus 2020 Long-Range Development Plan Update

The 2020 LRDP Update is a planning document for the Sacramento Campus "that anticipates population growth and establishes the land use patterns and relevant policies to guide implementation of facilities and infrastructure as the campus evolves." The 2020 LRDP Update includes the following relevant planning principles related to aesthetics (University of California, Davis 2020a):

Principle #2: Enhance Campus Public Realm and Landscape Character

This principle is focused on expanding open space through a network of landscaped areas connected by pedestrian trails and walkways, cultivating a "healing landscape" to support the physical and mental well-being of patients, visitors, students, staff members, and the community and other strategies.

Principle #4: Improve Pedestrian Connections throughout the Campus

All areas of the campus will be improved for better pedestrian access through pedestrian walkways and safe tree-lined sidewalks with efficient ways to move throughout the Sacramento Campus.

Principle #5: Provide Attractive Campus Entries and Edges

This principle focuses on entries and entry types for the various members of the campus community, including pedestrians, and the modes in which they arrive, including bicycles, transit, and vehicles, and provides strategies to improve campus entries and edges for all of the different modes.

The Land Use Plan section of the 2020 LRDP Update notes that the proposed project falls within the "Support" land use category. A campus-wide base-case building height maximum is set at 200 feet, not inclusive of mechanical penthouses and other ancillary roof uses. The project site is along a "streetscape" and not near a residential interface where the 40-foot minimum landscape buffer (i.e., the "Landscape Buffer" land use category) is required. Building heights will conform to the following step-backs to address building heights next to the edge of the campus at 49th Street:

- 0-40 feet from edge of campus: buffer (zero height),
- 40–100 feet from edge of campus: 40-foot maximum height, and
- 100–180 feet from edge of campus: 75-foot maximum height.

UC Davis Sacramento Campus 2020 Physical Design Framework

The UC Davis Sacramento Campus 2020 Physical Design Framework (2020 Physical Design Framework) accompanies the 2020 LRDP Update and provides planning and design guidance for site and architectural designers and consultants working on Sacramento Campus projects. Four campus-wide systems, or "frameworks," make up the structure for future development and redevelopment: Public Realm Framework, Mobility Framework, 45th Street Framework, and District Framework. All of these frameworks apply to the proposed project. They include measures to ensure that the campus will include pedestrian-friendly public spaces and streetscapes that are well designed and well landscaped to create a sense of place and space, create campus gateways and landscape buffers, provide shade and site amenities, contribute to the urban forest, and create aesthetically pleasing built and natural landscapes. The proposed project falls within the Support District, which serves as the infrastructure backbone that runs the campus. The primary purpose of the Support District is functionality; however, it should reflect the character of surrounding uses. Objectives for the Support District include locating future support use in areas that are convenient for campus operations, locating active uses and façades so they face main streets, and using façade and landscape transparency wherever possible (University of California, Davis 2020b).

UC Davis Health Campus Design Guidelines

The UC Davis Health Campus Design Guidelines (Design Guidelines) pertain to features such as concrete, masonry, finishes, site furnishings, electrical systems, and exterior improvements. Section 26.51.10, *Exterior Lighting,* of the Design Guidelines specifies that exterior lighting fixtures shall be an LED type with a color temperature of 4,000 Kelvin (K). In addition, this section specifies that "all fixtures shall be designed to minimize light pollution and glare, while meeting the light distribution requirements for a given area. A designation of full cutoff shall be considered, but not the sole criteria in evaluating a fixture's ability to minimize light pollution and glare" (University of California, Davis 2021).

Federal and State

There are no federal plans or policies addressing aesthetics that pertain to the CUP Expansion Project. In addition, there are no eligible or officially designated State Scenic Highways near the UC Davis Sacramento Campus (California Department of Transportation 2019).

Regional and Local

As a constitutionally created State entity, the UC is exempt from compliance with local land use regulations, including general plans and zoning, when using land under its control in furtherance of its educational mission. As background information, the City of Sacramento's (City's) General Plan goals and policies relevant to aesthetic and visual resources are presented below.

City of Sacramento General Plan

The Sacramento 2035 General Plan was adopted in March 2015. The Environmental Resources and Land Use and Urban Design Elements contain goals and policies regarding lighting, reflective glass, and the preservation of established neighborhoods that are relevant to aesthetics (City of Sacramento 2015a, 2015b). The 2040 General Plan is currently in the public review phase. The Land Use Element contains a variety of policies related to aesthetics. Policies applicable to the project are outlined below (City of Sacramento 2023).

Policy LUP-4.7: Visual and Physical Character. Using development standards and design standards/guidelines, the City shall promote development patterns and streetscape improvements that transform the visual and physical character of automobile-oriented corridors to create a positive impact on the human and natural systems that interact with them.

Policy LUP-6.5: Established Neighborhoods. The City should encourage new development to respect the pedestrian-scale, preautomobile form and lush urban forest that typifies established neighborhoods and contributes to their sense of place.

Policy LUP 7.5: Industrial Aesthetics. The City shall encourage the development and maintenance of well-designed industrial and light industrial properties and structures that meet adopted standards for visual quality and design.

Policy LUP 8.1: Unique Sense of Place. The City shall promote quality site, architectural, and landscape designs that include the following:

- Connected, walkable blocks;
- Distinctive parks and accessible open spaces;

- Tree-lined streets; and
- Varied architectural styles.

Policy LUP 8.9: People-Friendly Design. The City shall require a people-friendly design to be incorporated into buildings and spaces, including elements and features such as the following:

- Human scale, tree-shaded pedestrian passageways;
- Resting areas;
- Seating;
- Gathering places; and
- Other measures with demonstrated benefits for health and quality of life.

Policy LUP 8.11: Neighborhood and Transitions. The City shall ensure that development standards facilitate transitions between areas that border one another so that neighborhoods and districts maintain their own unique qualities.

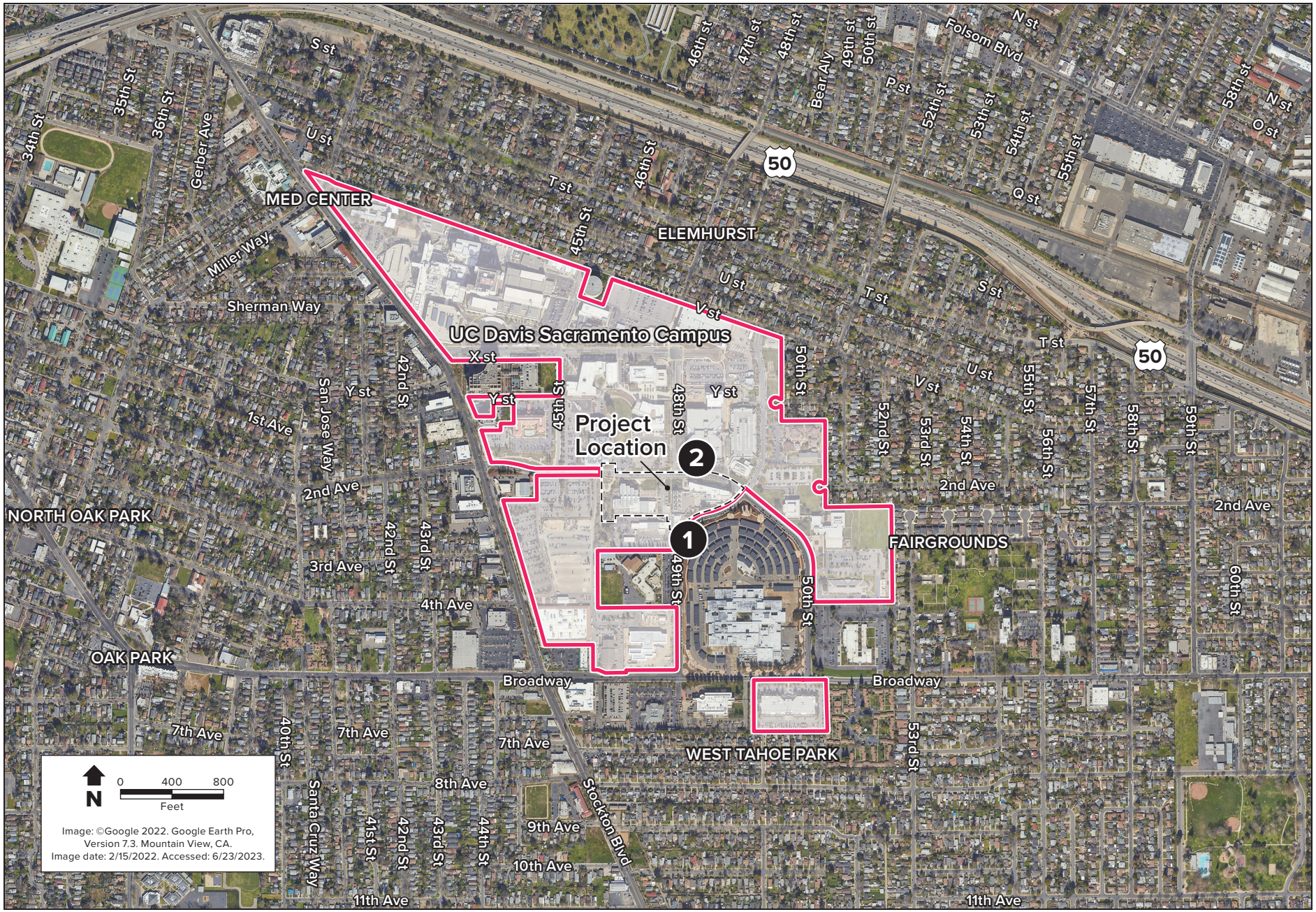
Environmental Setting

Section 3.1of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for aesthetics. The following discussion summarizes Section 3.1.1 of the 2020 LRDP Update SEIR and applicable updates since 2019.

Visual Character

The Sacramento Campus is in the city and county of Sacramento. Figure 2-1 identifies the project vicinity; the project components and site plans are identified in Figures 2-3 and 2-4, respectively. In addition, one of two potential Sacramento Municipal Utility District (SMUD) feeder routes would be installed underground between the SMUD East City Substation and the CUP. Both routes would travel through the Elmhurst neighborhood (Figures 2-5a and 2-5b). Figure 3.1-1 depicts the overall project site and the locations of key viewpoint photos taken of the project site. Photos taken from these representative key viewpoints are shown in Figures 3.1-2 and 3.1-3.

The Sacramento Campus is on Stockton Boulevard in east Sacramento, 2.5 miles southeast of downtown Sacramento between V Street and Broadway. The 146-acre campus is surrounded by low- to medium-density traditional residential neighborhoods and regional commercial uses. The Elmhurst neighborhood, which consists primarily of single-family homes, lies north of V Street and the campus. To the west is the North Oak Park neighborhood, which consists of a mix of single-family and multi-family residences. These neighborhoods are characterized as pre–World War II traditional neighborhoods. The Fairgrounds neighborhood southeast of the campus consists primarily of single-family and multi-family residential uses. Several public institutions and commercial uses are located between the southern edge of the campus and Broadway; these continue south of Broadway and west of the campus along Stockton Boulevard. As identified in *Regulatory Setting*, there are no State Scenic Highways near the campus (California Department of Transportation 2019). In addition, due to the amount of development and landscaping associated with the project site and vicinity, no scenic vista views are associated with the project site.



Graphics ... 104689 (09-14-2023) JC

UCDAVIS

Figure 3.1-1
Key Viewpoints





Graphics ... 104689 (09-14-2023) JC

Figure 3.1-2
Viewpoint 1: Photos of Existing CUP Looking South from 2nd Ave.





Graphics ... 104689 (09-14-2023) JC

Figure 3.1-3a
Viewpoint 2: Photos of Existing CUP Looking Northeast from 49th Street





Graphics ... 104689 (09-14-2023) JC

Figure 3.1-3b
Viewpoint 2: Photos of Existing CUP Looking Northeast from 49th Street

The campus currently includes medical facilities and support buildings, roadways, parking lots, and landscaping. Buildings on the project site range in height from one story to 13 stories. In addition to surface parking lots, there are three aboveground parking structures with three or four levels.

The site for the CUP Expansion Project comprises the existing CUP, the Facilities Support Services Building (FSSB), and Parking Structure 6 (PS6) (a previously approved project that was part of the Aggie Square Phase I EIR). In addition, two underground SMUD feeder routes are being analyzed. Both are within Sacramento's Elmhurst neighborhood. Route 1 would run from the SMUD East City Substation, south along 65th Street, west on Broadway, and then north to the CUP on 59th Street. Route 2 would run south from the SMUD East City Substation on 65th Street, west on T Street to 57th Street, and then south to 59th Street and the CUP.

The site for the CUP Expansion Project on the Sacramento Campus is bordered on the north by 2nd Avenue, which runs east/west across the campus. The area surrounding it is built out with campus medical buildings. The color of the site is dominated by dark gray asphalt paving, with trees, shrubs, grasses, and bark mulch providing green and brown accents. West of the FSSB is the major campus open space, which contains a walking path, benches, and native plantings and trees. South of the FSSB is the Language Academy of Sacramento. The western portion of the project site is bordered by 49th Street and a large parking area that is shaded by solar panels. There are no residential uses near this portion of campus.

Both of the proposed SMUD feeder routes are in the Elmhurst neighborhood. Route 1 would run primarily along Broadway, a busy arterial with residential housing, commercial businesses, and other urban uses. Route 2 would run primarily along T Street, which consists largely of single-family homes.

Key Viewpoints

The site for the CUP Expansion Project is visible from internal campus streets (Figure 3.1-2). It is also visible from adjacent campus buildings (Figure 3.1-3) and the major campus open space (Figure 3.1-4). As seen from key viewpoints, existing buildings and mature landscaping obscure large portions of the site for project.

The project site is well lit by street and parking lot lighting as well as exterior building lighting, interior light from buildings and garages, lighted signage, and bollard lighting along certain pedestrian pathways. Lighting levels in the Elmhurst neighborhood are lower than lighting levels on campus because of the residential nature of the land uses and the denser tree cover, which filters the light. There are also fewer streetlights, and less light emanates from building interiors.

Overall, the built environment on the project site and in the vicinity consists of well-planned land uses that serve the campus. Although some of the buildings differ in age and architectural style, campus buildings are well maintained. They contribute to an orderly built environment. Similarly, the natural environment associated with the project site and vicinity consists of well-manicured lawns, ornamental grasses, shrubs, and trees that provide aesthetic relief, seasonal visual interest (e.g., flowers and fall colors), and shading. This landscaping helps to create a pedestrian-friendly environment but also helps to reduce the scale of nearby buildings. The resulting visual quality is moderately high because of the order of the built environment and the natural harmony created by the existing landscaping on the well-designed campus.

Viewers Groups, Viewer Exposure, and Viewer Sensitivity

The study area consists of developed land uses. Viewer groups include recreationists, medical center employees and visitors, and travelers on local roadways. For the SMUD Component of the project, viewer groups include residences. This analysis evaluates the sensitivity of each viewer group and describes it using five ratings: low, moderately low, moderate, moderately high, and high.

Roadway Travelers

Roadway travelers in cars or shuttles include drivers, passengers, and shuttle riders on 49th Street, 50th Street, and 2nd Avenue. This viewer group includes people using existing parking lots on the project site. For the SMUD Component, roadway travelers also include those on 65th Street, Broadway, T Street, and 59th Street.

Roadways surrounding the project site are local, fairly low-speed routes. The durations of views for roadway travelers are very short on adjacent roads as travelers pass by the site for the CUP Expansion Project. In addition, viewing times available from parking lots are also relatively short due to the time it takes to park and walk to destinations and then walk back to the parking lots. This results in a moderate level of viewer exposure.

This viewer group is generally preoccupied with the act of driving (though less so for passengers in cars or shuttles). Viewers are typically aware of their surroundings because most of them are traveling to places where they go regularly. They are not expecting high aesthetic values when it comes to the project site. None of the streets they travel on have scenic route designations, and the site's current use for parking raises little expectation of high visual quality. Therefore, this viewer group has moderately low viewer sensitivity.

Medical Center Employees and Visitors

The medical buildings viewer group includes people working in or visiting the medical buildings surrounding the project site, most of which are across 2nd Avenue. These areas include the Same-Day Surgery Center, Lawrence J. Ellison Ambulatory Care Center, Parking Structure 2, a surface parking lot, and research buildings. The buildings are multiple stories and separated from the project site by 2nd Street. Although the medical offices are busy, the number of people looking out of the windows would represent a minority of building workers and visitors. The duration of their views is relatively short due to their activities, though a few of the hospital patients and their visitors may spend longer periods looking out of the windows. This results in a moderate level of viewer exposure.

Recreationists

The recreationist viewer group includes people traveling on foot or by bicycle throughout the site for the CUP Expansion Project. Recreationists are directly adjacent to the project site because they use sidewalks on 49th Street, on 2nd Avenue, or in the campus major open space.

This viewer group is relatively large; as is typical on campuses, many people travel by foot or by bicycle. Because these viewers move at a slower pace, the duration of their views is longer than viewers in vehicles. These viewers are typically aware of their surroundings because most of them use the streets, sidewalks, and trails regularly; they do not have expectations of high aesthetic value on the site. Therefore, this viewer group has moderate viewer sensitivity.

Residential Viewers

This viewer group is made up of a small group of residents in the Elmhurst neighborhood, along either of the two proposed SMUD routes between the SMUD East City Substation and the CUP. The CUP improvements would not be visible from the Elmhurst neighborhood, but residential users along 65th Street, Broadway, and T Street would have temporary views of the construction needed to install the underground feeder. The residential viewer group is often preoccupied with their activities, both inside and outside their homes. Therefore, this viewer group has high viewer sensitivity.

3.1.2 Environmental Impacts

This section describes the environmental impacts associated with aesthetics that would result from implementation of the CUP Expansion Project. It describes the methods used to determine the effects of the CUP Expansion Project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts are provided, if applicable.

Methods for Analysis

Aesthetic resources are assessed by evaluating the visual character and quality of the resources that make up the environment surrounding the project site, both before and after construction of the project, and determining how project changes would affect the surrounding natural and built environments.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the CUP Expansion Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- A substantial adverse effect on a scenic vista.
- Substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway.
- In non-urbanized areas, substantial degradation of the existing visual character or quality of public views of the site and its surroundings. In urbanized areas, conflict with applicable zoning or other regulations governing scenic quality.
- Introduction of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

Issues Not Evaluated Further

The project would be located entirely within an urbanized area. No rural areas would be affected by the project. In addition, as described in the *Environmental Setting* section, no scenic vistas or federal, State, or local scenic routes are associated with the study area. For these reasons, rural areas, scenic vistas, and scenic routes would not be affected by the project, and these resources are not discussed further.

Impacts and Mitigation Measures

Impact AES-1: Conflict with zoning or other regulations governing scenic quality in urbanized areas (less than significant with mitigation)

Summary of Impact AES-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	LTS	None	—
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the Previous EIR

The 2020 LRDP Update SEIR noted that impacts on the existing visual character and quality of the site resulting from build-out of the 2020 LRDP Update would be less than significant with mitigation because the campus is already developed, and new buildings would be compatible with existing uses. Implementation of Mitigation Measure LRDP-AES-1 would ensure that new landscaping would be installed within landscape buffers. Therefore, this impact would be less than significant with mitigation.

CUP Expansion Project Impacts

The site for the CUP Expansion Project is within the Sacramento Campus, which is already developed and surrounded by medical buildings and other infrastructure. The make-ready projects include extending utility lines underground from the existing CUP at 2nd Avenue to the intersection of 45th and X Street. A new roadway on the west side of the FSSB would be constructed to allow room for the CUP Annex. The pedestrian crossing on 2nd Avenue would be relocated farther west. The make-ready projects would result in temporary construction impacts that would be limited to the immediate project site, internal to the Sacramento Campus. These would include short-term views of construction activity on 2nd Avenue and in the campus major open space.

The CUP Expansion component entails removal of a portion of the FSSB, construction of the annex, and installation of additional equipment on the project site. The existing CUP includes an equipment yard that is screened from view on 49th Street by a cement block wall. Cooling towers can be seen above the wall. Viewer groups would be primarily roadway travelers and employees, who have moderately low and moderate viewer sensitivity, respectively.

The FSSB is visible from 2nd Avenue. The portion that would be removed is set back from the street by a vegetated area and partially screened from view by several large trees. Viewer groups would be primarily roadway travelers and employees, who have moderately low and moderate viewer sensitivity, respectively. FSSB demolition and construction of the new PS6 roadway would be visible from the campus major open space, which includes a walking path. In addition, a landscaped bioswale would be added for stormwater drainage in the eastern portion of the major open space area. Recreational viewers, who also have moderate visual sensitivity in this context, would experience temporary noise from and views of construction. Permanent changes in views include removal of the small vegetated area between the FSSB and the major open space area, and the addition of the landscaped bioswale.

A new electrical service yard would be within the boundaries of the existing CUP yard. The annex would be visually consistent with other buildings and equipment on the site and in the vicinity. This portion of the campus does not have a landscape buffer because there are no neighboring residences or offsite views.

The project would require a land use amendment to change 3.17 acres of "Education, Research, and Housing" land use to "Support" space. However, the 3.17 acres of land that would be converted to support space currently house the FSSB and the fleet building; therefore, the uses on the site would continue to function as support uses for other parts of the campus.

The PS6 access change would not change any of the surrounding land uses and would not result in the conversion of any of the campus major open space. The PS6 project was planned in the 2020 LRDP Update and previously analyzed and approved. The overall visual character of the project site would remain consistent.

In terms of the SMUD Component, both routes are in a developed area of Sacramento. Surrounding uses include residential housing (Route 1 and Route 2), some commercial uses (Route 1), and a school (Route 1). Although project construction activities, particularly the temporary and short-term presence of construction equipment, would interfere with viewer quality, these impacts would cease upon completion of construction. Furthermore, the project would not involve the operation of above-ground facilities that could permanently impede long-distance views in the area.

This impact would be **less than significant.** Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures would be required.

Impact AES-2: Introduction of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area (less than significant with mitigation)

Summary of Impact AES-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	S	LRDP-AES-2a LRDP-AES-2b LRDP-AES-2c LRDP-AES-2d	LTS
CUP Expansion	S	LRDP-AES-2a LRDP-AES-2b LRDP-AES-2c LRDP-AES-2d	LTS
SMUD Component	LTS	None	—
Whole Project	S	LRDP-AES-2a LRDP-AES-2b LRDP-AES-2c LRDP-AES-2d	LTS

LTS = less than significant; S = significant

Impacts Identified in the Previous EIR

The 2020 LRDP Update SEIR noted that new construction would result in new sources of light and glare but that implementation of Mitigation Measures LRDP-AES-2a through LRDP-AES-2d would ensure that impacts would be less than significant.

CUP Expansion Project Impacts

Construction

The make-ready projects would result in temporary construction impacts that would be limited to the immediate project site, internal to the Sacramento Campus. These would include short-term views of construction activity on 2nd Avenue and the campus major open space. There are no nearby residential uses. Construction of the CUP Expansion Project, including the new electrical service yard, annex, and equipment, would also result in temporary construction impacts, including potential light and glare. However, there are no nearby residential uses, and nighttime lighting is not anticipated to disturb any sensitive viewer groups.

The SMUD Component of the project would involve the installation of an underground utility feeder along one of two proposed routes (Figures 2-5a and 2-5b); both routes are in the Elmhurst neighborhood, which is residential. Although project construction activities, particularly the temporary and short-term presence of construction equipment, would interfere with residential viewer groups, who have moderately high visual sensitivity, these impacts would cease upon completion of construction.

Operation

Light and glare could result from operation of the new annex as well as the new equipment to be installed at the CUP electrical yard. In addition, the PS6 access route would require safety lighting. New buildings and equipment would be visually similar to buildings and equipment under existing conditions. Views from 49th Street are blocked by a cement block wall. The PS6 access change would be visually consistent with adjacent uses, which are planned for parking structure use. Furthermore, the SMUD Component of the project would not involve the operation of aboveground facilities that could permanently change views. Given the densely developed urban setting of the campus, and the fact that all new projects would be subject to design review, the impacts from the addition of these potential sources of light and glare would be **less than significant with implementation of LRDP mitigation** (i.e., mitigation measures LRDP-AES-2b through LRDP-AES-2d). Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-AES-2a: Apply Design Measures to Building Exteriors

Designs for specific projects will provide for the use of textured, nonreflective exterior surfaces and nonreflective glass.

Mitigation Measure LRDP-AES-2b: Utilize Directional Lighting Methods

Except as provided in Mitigation Measure LRDP AES-2c, all new outdoor lighting will use directional lighting methods, with shielded, cutoff light fixtures to minimize glare and upward-directed lighting.

Mitigation Measure LRDP-AES-2c: Review Lighting, Landscape, and Architectural Features Prior to Installation

Non-cutoff, unshielded lighting fixtures that are used to enhance nighttime views of walking paths, specific landscape features, or specific architectural features will be reviewed by Sacramento Campus Facilities Planning, Design, and Construction personnel prior to installation. This will ensure that the minimum amount of required lighting is used to achieve the desired nighttime emphasis and that the proposed illumination will result in no adverse effect on nighttime views.

Mitigation Measure LRDP-AES-2d: Implement Updated Lighting Design

The University will implement specific lighting and equipment designed to reduce light spill and glare as older lighting fixtures and designs are replaced over time.

3.2 Air Quality

This section describes the regulatory and environmental setting for air quality in the area for the Central Utility Plant (CUP) Expansion Project, analyzes effects on air quality resources that would result from implementation of the CUP Expansion Project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

In response to the notice of preparation (NOP) for this environmental impact report (EIR), commenters expressed the following concerns related to air quality:

- Coordination with the Sacramento Metropolitan Air Quality Management District (SMAQMD) and Sacramento Municipal Utility District (SMUD), respectively, to obtain necessary permits and optimize the route alignment for emissions reductions.
- Consideration of nitrogen oxide– (NO_X-) free heating options for the new gas-fired condensing boilers.
- Consistency with the 2020 Long-Range Development Plan Update Supplemental EIR (2020 LRDP Update SEIR), including Mitigation Measures AQ-1 through AQ-3.
- Analysis of construction-generated NO_X emissions against SMAQMD's thresholds of significance.
- Consideration of SMAQMD rules and basic construction emissions control practices.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the 2020 LRDP Update SEIR. Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.2.1 Existing Conditions

Regulatory Setting

Section 3.2 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for air quality. The following discussion summarizes Section 3.2.1 of the 2020 LRDP Update SEIR and applicable updates since 2019.

University of California

As noted in Section 3.0.2, *University of California Autonomy*, the University of California (UC or University), as a constitutionally created State of California (State) entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the UC that are in furtherance of its educational purposes. However, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

Federal and State

The federal Clean Air Act (CAA) and California CAA establish national and statewide air pollution control frameworks, respectively, including the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). There have been no changes to the NAAQS or CAAQS presented in Chapter 3.2, *Air Quality*, Table 3.2-1, of the 2020 LRDP Update SEIR. Table 3.2-2 in the 2020 LRDP Update SEIR provides a brief description of the sources for and health effects of the six criteria pollutants for which there are NAAQS.

In California, the California Air Resources Board (CARB) is responsible for enforcing the California CAA and developing effective statewide air pollution control programs. Since publication of the 2020 LRDP Update SEIR, CARB adopted Advanced Clean Cars II, which will dramatically reduce emissions from passenger cars for model years 2026 through 2035. The regulation requires an increasing proportion of new vehicles to be zero-emission vehicles, with the goal of 100 percent zero-emission vehicles for new vehicles sold by 2035.

Regional and Local

Sacramento Metropolitan Air Quality Management District

The proposed project would be located within the local jurisdiction of the SMAQMD. The SMAQMD is responsible for enforcing federal, State, and local air quality regulations and ensuring that Sacramento County complies with the federal and State air quality standards. There have been no changes to the regional air quality plans described in Chapter 3.2, *Air Quality*, of the 2020 LRDP Update SEIR. The SMAQMD rules and regulations identified for the 2020 LRDP Update may likewise apply to the proposed project.

City of Sacramento General Plan

As a constitutionally created State entity, the UC is exempt from compliance with local land use regulations, including general plans and zoning, when using land under its control in furtherance of its educational mission. As background information, goals and policies from the City of Sacramento (City) 2035 General Plan relevant to air quality resources are presented below.

GOAL ER 6.1: Improve the health and sustainability of the community through improved regional air quality and reduced greenhouse gas emissions that contribute to climate change.

Policy ER 6.1.1: Maintain Ambient Air Quality Standards. The City shall work with CARB and the SMAQMD to meet State and federal ambient air quality standards in order to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution.

Policy ER 6.1.2: New Development. The City shall review proposed development projects to ensure projects incorporate feasible measures that reduce construction and operational emissions for reactive organic gases, nitrogen oxides, and particulate matter (PM10 and PM2.5) through project design.

Policy ER 6.1.3: Emissions Reduction. The City shall require development projects that exceed SMAQMD ROG and NO_X operational thresholds to incorporate design or operational features that reduce emissions equal to 15 percent from the level that would be produced by an unmitigated project.

Policy ER 6.1.4: Sensitive Uses. The City shall coordinate with SMAQMD in evaluating exposure of sensitive receptors to toxic air contaminants (TAC) and impose appropriate conditions on projects to protect public health and safety.

Policy ER 6.1.10: Coordination with SMAQMD. The City shall coordinate with SMAQMD to ensure projects incorporate feasible mitigation measures to reduce greenhouse gas emissions and air pollution if not already provided for through project design.

Environmental Setting

Air quality reflects the amount of air pollution to which the public is exposed. Ambient air quality is affected by climatological conditions, topography, and the types and amount of pollutants emitted. The regional air quality study area for the proposed project is the Sacramento Valley Air Basin (SVAB), the same as described in Chapter 3.2, *Air Quality*, of the 2020 LRDP Update SEIR. There have likewise been no material changes to the description of air pollutants, climate and meteorology, regional attainment status, or regional emission inventory. Table 3.2-1, below, presents the most recent (2020–2022) ambient criteria pollutant monitoring data from the T Street station. Specifically, Table 3.2-1 shows violations of the State and federal standards for ozone, particulate matter (PM) with an aerodynamic diameter of 10 micrometers or less (PM10), and PM with an aerodynamic diameter of 2.5 micrometers or less (PM2.5). The State standards for carbon monoxide (CO) and nitrogen dioxide (NO_2) were not exceeded. Existing violations of the ambient air quality standards for ozone and PM indicate that individuals who are exposed to these pollutants may experience certain health effects, including an increased incidence of cardiovascular and respiratory ailments.

Table 3.2-1. Ambient Criteria Air Pollutant Monitoring Data (2019–2021) from the T Street Station

Pollutant Standards	2019	2020	2021
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.100	0.112	0.091
Maximum 8-hour concentration (ppm)	0.074	0.076	0.080
Number of days standard exceeded[a]			
CAAQS 1-hour standard (> 0.09 ppm)	1	1	0
NAAQS/CAAQS 8-hour standard (> 0.070 ppm)	1	3	1
Carbon Monoxide (CO) (data from the Bercut Drive Station)			
Maximum 8-hour concentration (ppm)	1.3	1.6	1.3
Maximum 1-hour concentration (ppm)	1.4	4.3	2.2
Number of days standard exceeded[a]			
NAAQS/CAAQS 8-hour standard (≥ 9 ppm/≥ 9.0 ppm)	0	0	0
NAAQS/CAAQS 1-hour standard (≥ 35 ppm/≥ 20 ppm)	0	0	0
Nitrogen Dioxide (NO_2)			
State maximum 1-hour concentration (ppb)	61	54	55
State second-highest 1-hour concentration (ppb)	60	52	45
Annual average concentration (ppb)	9	8	7
Number of days standard exceeded			
CAAQS 1-hour standard (0.18 ppm)	0	0	0
Particulate Matter (PM10)			
National[b] maximum 24-hour concentration (µg/m^3)	174.7	298.7	132.6
National[b] second-highest 24-hour concentration (µg/m^3)	90.7	232.2	124.8
State[c] maximum 24-hour concentration (µg/m^3)	179.1	292.8	142.6

Pollutant Standards	2019	2020	2021
State[c] second-highest 24-hour concentration (μg/m³)	92.9	260.5	128.5
National annual average concentration (μg/m³)	20.2	31.1	22.8
State annual average concentration (μg/m³)[d]	20.7	31.2	23.5
Number of days standard exceeded[e]			
NAAQS 24-hour standard (>150 μg/m³)	1	4	6
CAAQS 24-hour standard (>50 μg/m³)	24	59	12
Particulate Matter (PM2.5)			
National[b] maximum 24-hour concentration (μg/m³)	32.3	110.0	89.1
National[b] second-highest 24-hour concentration (μg/m³)	31.1	76.8	56.5
State[c] maximum 24-hour concentration (μg/m³)	37.1	150.4	89.1
State[c] second-highest 24-hour concentration (μg/m³)	32.2	116.0	56.5
National annual average concentration (μg/m³)	7.6	13.1	9.3
State annual average concentration (μg/m³)[d]	7.7	*	9.4
Number of days standard exceeded[e]			
NAAQS 24-hour standard (> 35 μg/m³)	0	6	4
Sulfur Dioxide (SO_2)			
No data			

Sources: California Air Resources Board 2023; U.S. Environmental Protection Agency 2023.

ppm = parts per million; NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; μg/m³ = micrograms per cubic meter; * = data not available.

a. An exceedance is not necessarily a violation.

b. National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

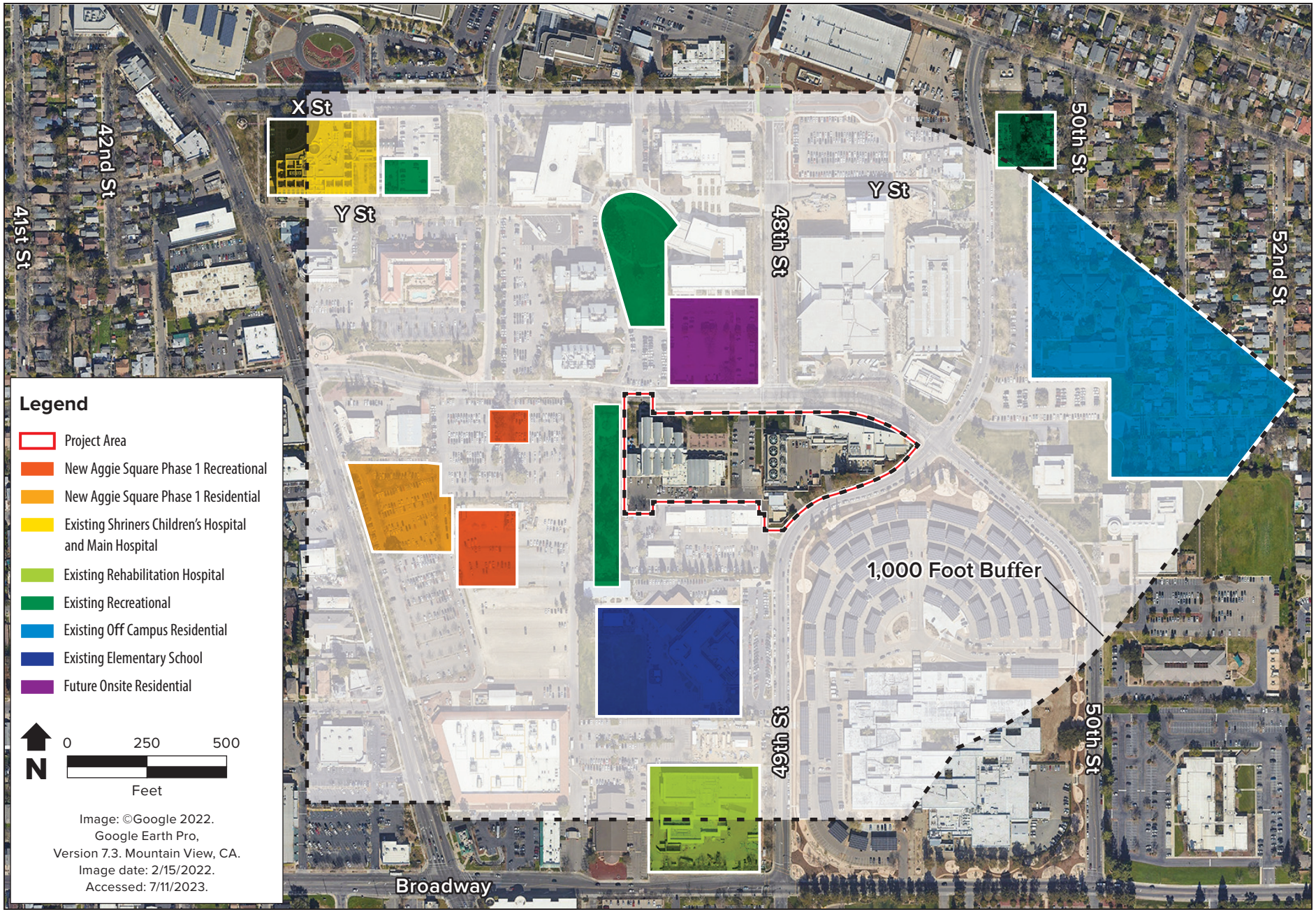
c. State statistics are based on local conditions data for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

d. State criteria for ensuring that data are complete for calculating valid annual averages are more stringent than the national criteria.

e. Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been rounded.

SMAQMD (2020a:2-4) defines *sensitive receptors* as "facilities that house or attract children, the elderly, and people with illnesses or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors." Consistent with the 2020 LRDP Update SEIR, for the purposes of impact assessment, the definition of sensitive receptors is expanded to include recreational facilities.

The CUP is within the boundaries of the Sacramento Campus, which includes a mix of medical, educational, residential, and recreational uses. Figure 3.2-1 shows sensitive receptors within 1,000 feet of the area for the CUP Expansion Project. The closest receptor is a recreational use associated with the Aggie Square complex, which is adjacent to the demolition area for the Facilities Support Services Building (FSSB). A new residential building may be constructed north of 2nd Avenue, approximately 75 feet from the CUP Annex.



UCDAVIS

Figure 3.2-1
Air Quality Sensitive Receptors within 1,000 Feet of the CUP

Installation of the new 40-megavolt-ampere (MVA) transmission line would begin northeast of the UC Davis Sacramento Campus at SMUD's East City Substation. As described in Chapter 2, *Project Description*, the alignment would follow one of two routes to the new electrical service yard at the CUP. There are residential receptors adjacent to both routes south of U.S. 50. Tahoe Elementary School is at the intersection of 59th and Broadway, along Route 1.

3.2.2 Environmental Impacts

This section describes the environmental impacts associated with air quality that would result from implementation of the project. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) any significant impacts are provided, if available.

Methods for Analysis

Criteria pollutants and precursors resulting from construction and operation of the project were assessed and quantified (where possible) using standard and accepted software tools, techniques, and emission factors, as described in detail below. A full list of assumptions and model outputs can be found in Appendix B.

Construction Criteria Pollutants and Precursors

Construction emissions would originate from off-road equipment exhaust, vehicle exhaust (on-road vehicles), site grading and earth movement, demolition, application of architectural coatings, and paving. Each of these sources was considered in the construction analysis.

Project components, as described in Chapter 2, *Project Description*, include two make-ready projects and construction of the CUP Expansion Project. A new 40 MVA transmission line (SMUD Component) would be installed as part of the CUP Expansion Project to support future electrification. Construction emissions from all sources and activities, except installation of the SMUD Component, were quantified using the California Emissions Estimator Model (CalEEMod), version 2022.1.1.14. Necessary technical details required to quantify emissions from the SMUD Component, including a detailed construction schedule and inventory of equipment, are not currently available. Accordingly, the SMUD Component is assessed qualitatively using emissions data from the Cordova Park Underground Cable Replacement Project (Cordova Park Project) as a representative project generally similar to the project's new 40 MVA transmission line (Sacramento Municipal Utility District 2022:3.3-8).

Construction of the make-ready projects and CUP Expansion Project, excluding the SMUD Component. would require 17 phases between May 2024 and November 2029. UC Davis provided the anticipated construction schedule, off-road equipment and vehicle inventory, acres to be graded and paved, and the amount of exported and imported material for each phase (Ramirez pers. comm.). These assumptions were input into CalEEMod and used to support the quantitative emissions modeling.

Operational Criteria Pollutant and Precursors

As discussed in Chapter 2, *Project Description*, the 2020 LRDP Update EIR evaluated emissions generated by the CUP to support future campus growth. The California Hospital Tower Project EIR

evaluated CUP emissions with full implementation of the California Hospital Tower Project and other projected growth on the UC Davis Sacramento Campus through 2030. The operational emissions analysis for the project quantifies and evaluates criteria pollutant and ozone precursor emissions generated by existing CUP sources that would be removed or modified with implementation of the project as well as new emission sources that would be installed by the project. Specifically:

- **Sources Removed**: The project would remove 4,600 square feet of the existing FSSB, which is an existing area source of emissions.
- **Sources Modified:** Emissions generated by the existing turbine and four steam boilers at the CUP would be modified by the project. Specifically, the turbine would operate at minimum load following construction of the CUP Annex; as such, natural gas consumption by the turbine would decrease. Boiler natural gas consumption at the CUP would likewise decrease relative to existing conditions due to additional campus electrification.
- **New Sources***:* Four new 10-million-British-thermal-unit gas-fired condensing boilers would be installed in the CUP Annex. Regular upkeep of the CUP Annex would be a new area source of emissions.

Table 3.2-7 in Chapter 3.2, *Air Quality*, of the 2020 LRDP Update SEIR identifies additional operational emission sources at the CUP (e.g., cooling towers, generators)[1] and on the UC Davis Sacramento Campus. The project would not change operating conditions for any of these existing sources (i.e., mobile, energy, fugitive, evaporative) relative to what was analyzed in the 2020 LRDP Update SEIR or California Hospital Tower Project EIR; as such, they are excluded from the air quality analysis for the proposed project.

Based on the project construction schedule, it was assumed that the first operational year at full build-out would be 2030. Thus, project operational emissions are assessed under 2030 conditions. The net change in emissions quantified for the project between existing (2019) and 2030 operating conditions represents the air quality impact analyzed in this section. Quantification methods for the sources and scenarios are further described below.

Existing (2019) Conditions

The project includes demolition of 4,600 square feet of the FSSB. This portion of the FSSB does not have any stationary sources, and its removal would not change associated mobile sources or building energy consumption. However, the reduction in building square footage would result in a minor change in area-source emissions (i.e., consumer products and the routine application of architectural coatings),[2] which were estimated using CalEEMod defaults for a 4,600-square-foot research building.

Existing greenhouse gas (GHG) emissions from the steam boilers and gas turbine at the CUP were obtained from the 2020 LRDP Update SEIR. The existing-conditions analysis for the CUP in the 2020 LRDP Update SEIR also included emissions from operation of eight hot-water boilers. However,

[1] The number of generators and associated fuel consumption would not change with implementation of the project. However, three emergency generators would be moved from the CUP to the CUP Annex. The locational change of generator emissions is assessed in the human health risk assessment, as discussed below.

[2] Building area sources also include landscaping equipment. However, demolition of the 4,600-square-foot wing was not assumed to change overall landscaping activity associated with the FSSB.

these boilers were installed in various locations at the main hospital and not at the CUP. The boilers have also since been decommissioned. Thus, existing emissions for the CUP reported in the 2020 LRDP Update SEIR have been adjusted to remove emissions generated by the eight hot-water boilers.

Project Analysis (2030 Conditions)

The gas turbine and four steam boilers at the CUP would be maintained. They would continue to operate with implementation of the project but at a reduced capacity. Criteria pollutant and precursor emissions generated by these sources were quantified, based on future expected fuel consumption data provided by UC Davis (Ramirez pers. comm.). Emission factors for the turbine and boilers were obtained from the 2020 LRDP Update SEIR and California Hospital Tower Project EIR. UC Davis also provided expected fuel consumption for the four new gas-fired condensing boilers to be installed in the new CUP Annex (Ramirez pers. comm.). Criteria pollutant and precursor emissions generated by the boilers were quantified using equipment-specific emission factors from the boiler vendor (CleaverBrooks 2023).[3]

CalEEMod was used to estimate area-source emissions for the CUP Annex. Area sources include landscaping equipment, consumer products, and architectural coatings. CalEEMod default values for a 40,000-square-foot warehouse were assumed.

Human Health Risk Assessment from Exposure to Toxic Air Contaminants

Construction

Diesel-powered construction equipment would emit diesel particulate matter (DPM) that could expose nearby sensitive receptors to increased cancer and non-cancer risks. A health risk assessment (HRA) was performed using the U.S. Environmental Protection Agency's (EPA's) most recent dispersion model, AERMOD (version 22112) as well as chronic risk assessment values recommended by Office of Environmental Health Hazard Assessment (OEHHA) (2015). The HRA, which analyzes health risks for nearby sensitive receptors, consists of three parts: a DPM inventory, air dispersion modeling, and risk calculations. A description of each of these parts follows.

Diesel Particulate Matter Inventory

The DPM inventory includes emissions associated with construction of the make-ready projects and the CUP Expansion Project (excluding the SMUD Component).[4] The construction DPM inventory is based on the CalEEMod outputs for diesel PM10 generated by onsite equipment and haul trucks.

Air Dispersion Modeling

The HRA used the EPA's AERMOD to model annual average DPM concentrations at nearby receptors. Modeling inputs, including emissions rates (in grams per second) and source characteristics (e.g.,

[3] Pursuant to the University of California Policy on Sustainable Practices (discussed further in Section 3.7, *Greenhouse Gases*), at least 40 percent of natural gas combustion at the CUP and CUP Annex must be from renewable natural gas (RNG) beginning in 2030. RNG is chemically identical to fossil natural gas; as such, criteria pollutant emissions generated when burned are the same (California Air Pollution Control Officers Association 2022:203).

[4] As discussed above, construction emissions from the SMUD Component are assessed qualitatively. Potential health risks from receptor exposure to these emissions are thus assessed qualitatively as well.

release height, stack diameter, plume width), are based on guidance provided by OEHHA (2015) and SMAQMD (2018). Meteorological data were obtained from CARB for Sacramento Executive Airport, which is approximately 3.5 miles southwest of the CUP.

Construction equipment emissions were characterized as an area source (AREAPOLY), with a release height of 5.0 meters (Sacramento Metropolitan Air Quality Management District 2013). Haul-truck emissions were characterized as a line/area source (LINEAREA), with a release height of 3.4 meters (U.S. Environmental Protection Agency 2015). Emissions from off-road equipment and onsite trucks were assumed to be onsite throughout the construction footprint. Emissions from offsite haul trucks were modeled along Stockton Boulevard, 2nd Avenue, 50th Street, and Broadway.

Analysts assumed construction hours of 7:00 a.m. to 5:00 p.m. occurring 5 days per week over the duration of construction. To account for plume rise associated with mechanically generated construction emissions, the initial vertical dimension of area sources was modeled at 4.65 meters; for the line/area sources, it was modeled at 3.16 meters (U.S. Environmental Protection Agency 2011). The urban dispersion option with a Sacramento County population of 1,531,000 was also assumed.

Sensitive receptors were placed as shown in Figure 3.2-1. A receptor height of 1.8 meters was assumed. The analysis includes all existing and new receptors shown in Figure 3.2-1.

Risk Calculations

The risk calculations incorporate OEHHA's age-specific factors that account for increased sensitivity to carcinogens during early-in-life exposure. The approach for estimating cancer risk from long-term inhalation and exposure to carcinogens requires calculating a range of potential doses and multiplying those doses by cancer potency factors in units corresponding to the inverse dose. For cancer risk, the risk for each age group was calculated using the appropriate daily breathing rates, age sensitivity factors, and exposure durations. The cancer risks calculated for individual age groups were summed to estimate the cancer risk for each receptor. Chronic cancer and hazard risks were calculated using Equations 5.4.1 and 8.2.4a and Section 8.3.1, respectively, from OEHHA's (2015) guidance.

All residential receptors were modeled as residential; hospital receptors were likewise conservatively modeled as residential, assuming a third-trimester child would be born at the hospital and then require long-term care. The Language Academy of Sacramento was modeled as a school; recreational receptors were modeled as recreational.

Operation[5]

CUP boilers and the natural gas turbine would emit toxic metals and reactive organic gas (ROG) that could expose nearby sensitive receptors to increased cancer and non-cancer risks. although implementation of the project would not change emergency generator use, it will relocate three diesel-powered emergency generators from the CUP to the CUP Annex. An HRA was performed to analyze these sources using EPA's AERMOD (version 22112) and OEHHA (2015) guidance. The

[5] An additional HRA will be conducted by SMAQMD as part of its routine permitting process (Regulation 2, Permits). The HRA will evaluate potential health risks to receptors from all proposed stationary sources, assuming maximum allowed maintenance run time, which is typically 50 to 100 hours per year. SMAQMD publishes its independent HRA completed pursuant to Regulation 2 at the following: http://www.airquality.org/About-Us/News-Notices.

operational HRA consists of five parts: a DPM inventory, a toxic metals inventory, an ROG inventory, air dispersion modeling, and risk calculations. A description of each of these parts follows.

Diesel Particulate Matter Inventory

Operational DPM emissions from the existing boilers (secondary fuel-oil combustion) at the CUP and the three relocated emergency generators were obtained from the California Hospital Tower Project EIR.

Toxic Metals Inventory

The operational toxic metals inventory is based on the emissions calculations for PM10 generated by CUP boilers and the natural gas turbine (described above). Toxic metals embedded within the PM10 compounds from boilers and the natural gas turbine were speciated using PM speciation profiles for natural gas-fired boilers and gaseous material combustion, respectively (California Air Resources Board 2023).

Reactive Organic Gas Inventory

The operational ROG inventory is based on the emissions calculations for ROG generated by the CUP boilers and natural gas turbine (described above). Carcinogenic organics from boilers and the natural gas turbine were speciated from the ROG output using organic gas speciation profiles for external-combustion boilers (natural gas) (California Air Resources Board 2023).

Air Dispersion Modeling

The HRA used EPA's AERMOD model, version 22112, to model annual average DPM, toxic metal, and ROG concentrations at nearby receptors. Modeling inputs, including emissions rates (in grams per second) and source characteristics (e.g., release height, stack diameter, plume width), are based on guidance provided by OEHHA (2015). Meteorological data were obtained from CARB for Sacramento Executive Airport.

Boiler, generator, and turbine emissions were characterized as point sources (POINT). Emissions were assumed to occur at any time during a year. Source release parameters are found in Appendix B. The urban dispersion option with a Sacramento County population of 1,531,000 was also assumed.

To allow AERMOD to incorporate algorithms and evaluate pollutant downwash on point-source dispersion, the dimensions and locations of all buildings on the UC Davis Sacramento Campus were incorporated into the modeling domain. The direction-specific building downwash dimensions were determined using the latest version (04274) of the Building Profile Input Program, PRIME (BPIP PRIME).

Sensitive receptors were placed at the same locations as the construction AERMOD run (described above). The operational analysis also includes the future onsite residential building north of the CUP Annex.

Risk Calculations

The calculation of risk is the same as described above for construction under *Risk Calculations*.

Correlation of Criteria Pollutants to Potential Human Health Consequences

The California Supreme Court's decision in *Sierra Club v. County of Fresno* (6 Cal. 5th 502) (hereafter referred to as the "Friant Ranch Decision") reviewed the long-term regional air quality analysis contained in the EIR for the proposed Community Plan Update and Friant Ranch Specific Plan (Friant Ranch Project). The Friant Ranch Project is a 942-acre master-plan development in unincorporated Fresno County and the San Joaquin Valley Air Basin, an air basin currently in nonattainment under the NAAQS and CAAQS for ozone and PM2.5. The court found that the EIR's air quality analysis was inadequate because it failed to provide enough detail "for the public to translate the bare [criteria pollutant emissions] numbers provided into adverse health impacts or to understand why such a translation is not possible at this time." The court's decision clarifies that environmental documents must attempt to connect a project's regional air quality impacts to specific health effects or explain why it is not technically feasible to perform such an analysis.

Potential health effects associated with construction and operational criteria pollutants generated by the project were estimated using SMAQMD's *Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District* (Ramboll 2020). The guidance provides two Excel calculators that were developed from photochemical and health effects modeling of hypothetical projects throughout the Sacramento Federal Nonattainment Area (SFNA). The Minor Project Health Screening Tool provides insights on the health effects that may result from projects emitting NO_X, ROG, and PM2.5 at levels at or below 82 pounds per day, which corresponds to the highest daily emissions threshold of all SFNA air districts. The Strategic Area Project Health Screening Tool estimates health effects that may result from projects emitting NO_X, ROG, and PM2.5 at levels between 164 and 656 pounds per day located within one of five strategic growth areas.

Outputs from SMAQMD's tools include only health effects of NO_X, ROG, and PM2.5 that have been researched enough to be quantifiable (Ramboll 2020). These include the following health endpoints:

- Mortality (all causes).
- Hospital admissions (respiratory, asthma, cardiovascular).
- Emergency room visits (asthma/respiratory).
- Acute myocardial infarction (nonfatal).

As noted in SMAQMD's guidance, research has identified other health effects for both PM2.5 and ozone precursors (ROG and NO_X) (Ramboll 2020). For example, exposure to PM2.5 at certain concentrations can alter metabolism, leading to weight gain and diabetes; cause cognitive decline, brain inflammation, or reduced brain volume; and affect gestation, resulting in low birthweight or preterm birth (Ramboll 2020). Likewise, at high enough doses, exposure to ozone can increase lung permeability, increasing susceptibility to toxins and microorganisms (Ramboll 2020). These and other effects have been documented, but a quantitative correlation to project-generated emissions cannot be accurately established on the basis of published studies (Ramboll 2020). Accordingly, these *potential* health effects of project-generated air pollution are qualitatively documented and disclosed in this section and under Impact AQ-3.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the CUP Expansion Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Conflict with or obstruction of implementation of the applicable air quality plan.
- Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is a nonattainment area for an applicable federal or State ambient air quality standard.
- Expose sensitive receptors to substantial pollutant concentrations.
- Result in other emissions (such as those leading to odors) affecting a substantial number of people.

According to the CEQA Guidelines Section 15064.7, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make significance determinations for potential impacts on environmental resources. As described above, SMAQMD is responsible for ensuring that State and federal ambient air quality standards are not violated within Sacramento County. The sections below summarize the local air district thresholds (where applicable) for each of the four impact criteria.

Plan Consistency

Projects that propose development that is consistent with the growth anticipated by the Sacramento Area Council of Governments (SACOG) 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) and local plans, including the current 2020 LRDP Update, would be consistent with SMAQMD's Sacramento Regional Ozone Attainment Plan (OAP)[6]. SMAQMD's *Guide to Air Quality Assessment in Sacramento County* (CEQA Guide) (2020b:4-6) further notes that "by exceeding the District's mass emission thresholds for operational emissions of ROG, NO_X, PM10 or PM2.5, the project will be considered to conflict with or obstruct implementation of the District's air quality planning efforts." SMAQMD's mass emission thresholds are discussed further below.

Cumulatively Considerable Net Increase in Criteria Pollutants

This analysis evaluates the impacts of criteria pollutants generated by a project by comparing project emissions to SMAQMD thresholds, which consider whether a project's emissions would result in a cumulatively considerable adverse contribution to existing air quality conditions (e.g., fail to meet current federal ozone, PM2.5, or PM10 standards). If a project's emissions would be less than the threshold, the project would not be expected to result in a cumulatively considerable contribution to a significant cumulative impact. Accordingly, emissions generated by a project would result in a significant impact if any of the thresholds summarized in Table 3.2-2 would be exceeded.

[6] SMAQMD has adopted the *Sacramento Regional 2008 8-Hour Ozone Attainment and Reasonable Further Progress Plan*, which outlines how the SFNA will meet the 75 parts per billion (ppb) 8-hour ozone NAAQS. The USEPA lowered the federal 8-hour standard of 75 ppb to 70 ppb on October 1, 2015. Air districts in the SFNA released the *Draft Sacramento Regional 2015 National Ambient Air Quality Standard 8-Hour Ozone Attainment and Reasonable Further Progress Plan* in August 2023. This plan shows how the SFNA will achieve the 70-ppb standard by the attainment date of August 2033. The plan is draft as of the writing of this EIR with final adoption by CARB (if approved) scheduled for October 26, 2023.

Table 3.2-2. SMAQMD's Cumulative Criteria Pollutant Mass Emission Thresholds

Pollutant	Construction	Operation
ROG	None	65 pounds per day
NO_X	85 pounds per day	65 pounds per day
PM10	80 pounds per day and 14.6 tons per year if all feasible BACT and BMPs are applied	Same as construction
PM2.5	82 pounds per day and 15.0 tons per year if all feasible BACT and BMPs are applied	Same as construction

Source: Sacramento Metropolitan Air Quality Management District 2020a.
BACT = best available control technology; BMP = best management practices; NO_X = nitrogen oxide; PM10 = particulate matter less than 10 microns in diameter; ROG = reactive organic gas

SMAQMD's ROG and NO_X thresholds are based on emissions reduction targets that were set for new development projects in consideration of regional ozone attainment goals. The PM thresholds align with the new-source review permit offset levels, which are designed to prevent new emissions sources from affecting attainment progress. SMAQMD thresholds therefore represent the maximum emissions levels from new development that support attainment of the NAAQS and CAAQS.

Receptor Exposure to Substantial Pollutant Concentrations

All criteria pollutants generated by the project are associated with some form of health risk (e.g., lower respiratory problems). Criteria pollutants can be classified as either regional or localized pollutants. Regional pollutants can be transported over long distances and affect ambient air quality far from the emissions source. Localized pollutants affect ambient air quality near the emissions source. As noted above, the primary pollutants of concern generated by the project are ozone precursors (ROG and NO_X), PM, and toxic air contaminants (TACs). The following sections discuss thresholds and analysis considerations for regional and local project-generated pollutants with respect to their human health implications.

Regional Pollutants (Ozone Precursors and Regional Particulate Matter)

Adverse health effects induced by regional criteria pollutant emissions generated by the project (ozone precursors and PM) are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). For these reasons, ozone precursors (ROG and NO_X) contribute to the formation of ground-borne ozone on a regional scale. Emissions of ROG and NO_X generated in one area may not equate to a specific ozone concentration in that same area. Similarly, some types of particulate pollution may be transported over long distances or formed through atmospheric reactions. As such, the magnitude and locations of specific health effects from exposure to increased ozone or regional PM concentrations are the product of emissions generated by numerous sources throughout a region, as opposed to a single individual project. Moreover, exposure to regional air pollution does not guarantee that an individual will experience an adverse health effect because there are large individual differences in the intensity of symptomatic responses to air pollutant. These differences are influenced, in part, by the underlying health condition of an individual, which cannot be known. Nonetheless, emissions generated by the project could increase photochemical reactions and the formation of tropospheric ozone and secondary PM, which, at certain concentrations, could lead to an increased incidence of specific health consequences, such as various respiratory and cardiovascular ailments. As discussed previously, air districts develop region-specific CEQA thresholds of significance in consideration of existing air

quality concentrations and attainment designations under the NAAQS and CAAQS. The NAAQS and CAAQS are informed by a wide range of scientific evidence that demonstrates there are known safe concentrations of criteria pollutants. Accordingly, the project would expose receptors to substantial regional pollution if any of the thresholds summarized in Table 3.2-2 are exceeded.

Localized Pollutants (Particulate Matter and Toxic Air Contaminants)

Localized pollutants generated by a project are deposited near the emissions source and potentially affect the population near the emissions source. Because these pollutants dissipate with distance, emissions from individual projects can result in direct and material health impacts on adjacent sensitive receptors. The localized pollutants of concern associated with the project are PM and TACs (including asbestos). The applicable thresholds for each pollutant are discussed below.

Particulate Matter

As shown in Table 3.2-2, SMAQMD has adopted PM thresholds of significance to evaluate whether construction- and operations-generated PM would result in an air quality impact. SMAQMD (2020c:3-4) also recommends implementation of best management practices (BMPs) to reduce dust emissions and associated localized health impacts.

Asbestos

Asbestos is the name given to several naturally occurring fibrous silicate minerals. Before the adverse health effects of asbestos were identified, asbestos was widely used as insulation and fireproofing in buildings; it can still be found in some older buildings. SMAQMD considers a project to have a significant asbestos impact if the project does not comply with the applicable regulatory requirements outlined in Rule 902 to control asbestos from demolition or the renovation of structures.

Other Toxic Air Contaminants

SMAQMD has adopted incremental cancer and hazard thresholds to evaluate receptor exposure to single sources of TACs. The "substantial" TAC threshold defined by SMAQMD is any exposure of a sensitive receptor to an individual emissions source resulting in an excess cancer risk level of more than 10 in 1 million or a non-cancer (i.e., chronic or acute) hazard index (HI) greater than 1.0. These threshold levels should be used to determine whether a project's TAC emissions are cumulatively considerable (Sacramento Metropolitan Air Quality Management District 2020d:8-8).

Odors Emissions

SMAQMD (2016:7-4) does not have an explicit odor threshold but has established recommended odor screening distances. The air district recommends that odor analyses consider the types of odors associated with a project, the general locations of sensitive receptors, site meteorology, and prior odor complaints.

Impacts and Mitigation Measures

Impact AQ-1: Conflict with or obstruction of implementation of the applicable air quality plan (less than significant)

Summary of Impact AQ-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	LTS	None	—
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that the LRDP Update would conflict with SMAQMD's air quality attainment plans, resulting in a significant impact because the anticipated LRDP growth is greater than what was assumed in SACOG's 2016 MTP/SCS, which informed the analysis and conclusions of the Sacramento Regional OAP. Even with implementation of Mitigation Measure LRDP-AQ-1, this impact was significant and unavoidable.

CUP Expansion Project Impacts

Implementation of the project would not directly increase the daily population or employment at the UC Davis Sacramento Campus. Indirectly, the project could result in an increase in the daily population of the Sacramento Campus by providing the utility load for campus growth. This growth would support intensification of existing and planned hospital-related uses at the Sacramento Campus that were envisioned in the 2010 LRDP and 2020 LRDP Update. The project neither requires expansion of the existing campus boundary nor redesignation of the existing land use category. Thus, the project is consistent with the growth planning and development characteristics of the 2010 LRDP and 2020 LRDP Update, and thus SACOG's MTP/SCS. Also, as discussed below under Impact AQ-2, operation of the project would not exceed SMAQMD's threshold of significance. Accordingly, the project would not conflict with SMAQMD's air quality attainment plan, and this impact would be **less than significant**. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Impact AQ-2: Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is a nonattainment area for an applicable federal or State ambient air quality standard (less than significant with mitigation)

Summary of Impact AQ-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	S	LRDP-AQ-2a LRDP-AQ-2b	LTS
CUP Expansion	S	LRDP-AQ-2a LRDP-AQ-2b LRDP-AQ-2c	LTS
SMUD Component	S	LRDP-AQ-2a LRDP-AQ-2b	LTS
Whole Project	S	LRDP-AQ-2a LRDP-AQ-2b LRDP-AQ-2c LRDP-AQ-2d AQ-2	LTS

LTS = less than significant; S = significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that, with implementation of Mitigation Measures LRDP-AQ-2a through LRDP-AQ-2d, overall plan-related construction emissions would be less than significant. However, operational particulate matter emissions (PM10) would be significant and unavoidable, even with implementation of Mitigation Measures LRDP-AQ-2e and LRDP-TRA-1a.

CUP Expansion Project Impacts

Construction

Criteria pollutants and precursors generated by construction of the make-ready projects and CUP Expansion Project (excluding the SMUD Component) were quantified using CalEEMod, as described above. Construction activities would occur between May 2024 and November 2029. Table 3.2-3 summarizes the results of the emissions modeling. The table compares maximum daily and annual emissions to SMAQMD's NO_X, PM10, and PM2.5 thresholds. Although SMAQMD does not recommend ROG thresholds, estimates of construction-generated ROG emissions, an ozone precursor, are shown for informational purposes only. Refer to Appendix B for model outputs.

As shown in Table 3.2-3, construction of the make-ready projects and CUP Expansion Project (excluding the SMUD Component) would result in an exceedance of SMAQMD's maximum daily NO_X threshold in 2025. This exceedance is due primarily to exhaust from the combustion of fuel in off-road construction equipment and on-road vehicles during simultaneous construction of multiple phases. Both the make-ready projects and CUP Expansion Project would also generate fugitive dust emissions, which SMAQMD considers significant unless controlled through application of BMPs.

Table 3.2-3. Estimated Unmitigated Construction Criteria Pollutants and Precursors for the Make-Ready Projects and CUP Expansion (Excluding the SMUD Component)

	Maximum Daily Emissions (lb/day)[a]				Annual Emissions (tpy)[a]	
Year[b]	ROG[c]	NO_X	PM10	PM2.5	PM10	PM2.5
2024	8	81	37	12	1.0	0.4
2025	82	**132***	58	16	5.7	1.7
2026	78	81	44	13	1.3	0.3
2027	2	18	13	2	1.3	0.2
2028	2	17	13	2	1.5	0.2
2029	2	17	13	2	0.8	0.1
SMAQMD threshold[d]	–	85	80[e]	82[e]	14.6[e]	15.0[e]

Source: ICF modeling (Appendix B).

Note: **Bold underline** with an asterisk (*) indicates an exceedance of SMAQMD's threshold.

lb/day = pounds per day; NO_X = nitrogen oxides; PM10 = particulate matter less than 10 microns in diameter; PM2.5 = particulate matter less than 2.5 microns in diameter; ROG = reactive organic gases; tpy = tons per year.

a. The emissions intensity of vehicles can differ in summer and winter. CalEEMod generates summer- and winter-period emissions in which summer emissions factors are used for activities occurring between April and September, and winter emissions factors are used for activities occurring between October and March. Where applicable for construction phases occurring in October, the higher of the two estimates are presented above.

b. Analysis adds emissions among sub-phases occurring on the same day. The reported value for each year represents the highest emissions that would be generated on any one day during the year.

c. Although SMAQMD does not recommend ROG thresholds, estimates of construction-generated ROG emissions, which are an ozone precursor, are shown for informational purposes only.

d. In developing these thresholds, SMAQMD considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable.

e. With application of best management practices.

Construction of the SMUD Component would generate NO_X emissions in addition to those modeled in Table 3.2-3. As discussed above, project-specific construction details for the SMUD Component are not currently available. Emissions estimates for the Cordova Park Project, which includes installation of a similar transmission line, are used as reasonable proxies for the SMUD Component. The EIR for the Cordova Park Project indicates that construction activities would generate maximum daily emissions of 5 pounds of ROG, 47 pounds of NO_X, 9 pounds of PM10, and 5 pounds of PM2.5 (SMUD 2022:3.3-8). Construction of the SMUD Component could occur for 2 years between 2025 and 2029. When added to maximum daily emissions modeled for other project activities (Table 3.2-3) during these years, an additional exceedance of SMAQMD's NO_X threshold may occur in 2026.

Implementation of Mitigation Measure LRDP-AQ-2a is required to reduce fugitive dust emissions generated by construction of the project. The measure identifies SMAQMD's basic and enhanced construction emission control practices for fugitive dust. Mitigation Measure LRDP-AQ-2b is also required to reduce NO_X emissions. Mitigation Measure LRDP-AQ-2b requires all off-road equipment to use renewable diesel and meet EPA-approved Tier 3 or 4 final emissions standards, depending on when construction occurs. The mitigation also requires construction equipment to be maintained in proper working condition and minimize idling time, consistent with SMAQMD best practices. Although there is no threshold for ROG, Mitigation Measure LRDP-AQ-2c is required to reduce ROG emissions (which are precursors to ozone formation) from architectural coatings for the CUP Expansion Project. Table 3.2-4 shows modeled emissions with Mitigation Measures LRDP-AQ-2a through LRDP-AQ-2c.

Table 3.2-4. Estimated Construction Criteria Pollutants and Precursors for the Project (Excluding the SMUD Component) with Implementation of Mitigation Measures LRDP-AQ-2a, LRDP-AQ-2b, and LRDP-AQ-2c

	Maximum Daily Emissions (lb/day)[a]				Annual Emissions (tpy)[a]	
Year[b]	ROG[c]	NO_X	PM10	PM2.5	PM10	PM2.5
2024	3	62	14	6	0.4	0.2
2025	73	53	19	6	1.9	0.6
2026	72	33	15	5	0.4	0.1
2027	1	9	3	<1	0.3	0.1
2028	1	9	3	< 1	0.4	0.1
2029	1	9	3	< 1	0.2	< 0.1
SMAQMD threshold[d]	—	85	80[e]	82[e]	14.6[e]	15.0[e]

Source: ICF modeling (Appendix B).

Note: **Bold underline** with an asterisk (*) indicates an exceedance of SMAQMD's threshold.

lb/day = pounds per day; NO_X = nitrogen oxides; PM10 = particulate matter less than 10 microns in diameter; PM2.5 = particulate matter less than 2.5 microns in diameter; ROG = reactive organic gases; tpy = tons per year.

a. The emissions intensity of vehicles can differ in summer and winter. CalEEMod generates summer- and winter-period emissions in which summer emission factors are used for activities occurring between April and September, and winter emission factors are used for activities occurring between October and March. Where applicable for construction phases occurring in October, the higher of the two estimates are presented above.

b. Analysis adds emissions among sub-phases occurring on the same day. The reported value for each year represents the highest emissions that would be generated on any one day during the year.

c. Although SMAQMD does not recommend ROG thresholds, estimates of construction-generated ROG emissions, which are an ozone precursor, are shown for informational purposes only.

d. In developing these thresholds, SMAQMD considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable.

e. With application of best management practices.

Mitigation Measure LRDP-AQ-2a would ensure that the make-ready projects, the CUP Expansion Project, and SMUD Component comply with SMAQMD's BMPs to control fugitive dust. As shown in Table 3.2-3, implementation of Mitigation Measure LRDP-AQ-2b would reduce NO_X emissions for the make-ready projects and CUP Expansion Project (exclusive of the SMUD Component) to levels below SMAQMD's threshold. Mitigated proxy emissions for the SMUD Component are not available. However, if the unmitigated estimate of 47 pounds per day is added to the maximum daily estimates shown in Table 3.2-4 for 2025 through 2029, combined emissions in 2025 would total 100 pounds and still exceed SMAQMD's NO_X threshold. This is a conservative estimate for the whole project in 2025 because Mitigation Measure LRDP-AQ-2b would reduce NO_X emissions for the SMUD Component, but the magnitude cannot be currently quantified. In addition, construction of the SMUD Component may not occur in 2025; however, it is conservatively analyzed as occurring any time between 2025 and 2029.

Mitigation Measure LRDP-AQ-2d requires UC Davis to fund offsite projects and programs to offset construction-related NO_X emissions generated by development under the LRDP to below SMAQMD's maximum daily threshold of 85 pounds per day. Mitigation Measure AQ-2 outlines the offset requirement specifically for the proposed project if construction of the SMUD Component begins in 2025. Implementation of Mitigation Measure LRDP-AQ-2d and project-specific mitigation measure AQ-2 would reduce NO_X emissions from construction of the project to **less than significant with LRDP and project specific mitigation.** Thus, the project would not result in a new or more severe impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-AQ-2a: Reduce construction-generated fugitive dust

Land use development projects as part of the implementation of the 2020 LRDP Update will require all construction contractors to implement the measures below to reduce construction-generated fugitive dust. Control of fugitive dust is required per SMAQMD Rule 403 and enforced by SMAQMD. The list of required measures was informed by SMAQMD's basic and enhanced construction emission control practices.

- Water exposed soil with adequate frequency to prevent fugitive dust and particulates from leaving the project site. However, do not overwater to the extent that sediment flows off the site. Exposed surfaces include, but are not limited to, soil piles, graded areas, and unpaved parking areas,
- Suspend excavation, grading, and/or demolition activity when sustained wind speeds exceed 25 miles per hour (mph).
- Install wind breaks (e.g., trees, solid fencing) on the average dominant windward side(s) of construction areas. For purposes of implementation, chain-link fencing with added landscape mesh fabric adequately qualifies as solid fencing.
- For dust control in disturbed but inactive construction areas, apply soil stabilization measures adequate to mitigate airborne particulates as soon as possible.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Treat site accesses from the paved road with a 6- to 12-inch layer of wood chips, mulch, gravel, or other approved method to reduce generation of road dust and road dust carryout onto public roads.
- Cover or maintain at least 2 feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Establish a 15 mph speed limit for vehicles driving on unpaved portions of project construction sites.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The phone number of the SMAQMD will also be visible to ensure compliance.

UC Davis will ensure that the implementation of this mitigation measure is consistent with the UC Davis stormwater program and does not result in offsite runoff from watering for dust control purposes.

Mitigation Measure LRDP-AQ-2b: Reduce construction-generated emissions from equipment and vehicle exhaust

Land use development projects as part of the implementation of the 2020 LRDP Update will require all construction contractors to implement the measures below to reduce construction-

generated emissions from equipment and vehicle exhaust. The list of required measures was informed by SMAQMD's basic and enhanced construction emission control practices.

- For all development except Aggie Square Phase I, use construction equipment with engines meeting EPA Tier 3 or better emission standards prior to 2025 and EPA Tier 4 Final or better emission standards beginning in 2025. For Aggie Square Phase I, all engines must be EPA certified Tier 4 Final or better, regardless of construction year. Equipment requirements may be waived by UC Davis but only under the following unusual circumstances: if use of a particular piece of off-road equipment meeting Tier 4 Final standards or Tier 3 standards is not technically feasible, or the equipment is not commercially available, or there is a compelling emergency requiring the use of off-road equipment that does not meet the equipment requirements above. If UC Davis grants the waiver, the contractor will use the next-cleanest piece of off-road equipment available in the following order: Tier 4 Interim, Tier 3, and then Tier 2 engines.
- Use renewable diesel fuel in all heavy-duty, off-road diesel-fueled equipment. Renewable diesel must meet the most recent ASTM D975 specification for ultra low-sulfur diesel and have a carbon intensity no greater than 50 percent of the diesel with the lowest carbon intensity among petroleum diesel fuels sold in California.
- Use a model year 2010 or newer engine in all diesel on-road trucks used to haul construction materials.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (California Code of Regulations [CCR], Title 13, Sections 2449[d][3] and 2485). Provide clear signage that posts this requirement for workers at the entrances to the site.
- Provide current certificate(s) of compliance with CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation (CCR, Title 13, Sections 2449 and 2449.1).
- Maintain all construction equipment in proper working condition, according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.

Mitigation Measure LRDP-AQ-2c: Reduce evaporative emissions during architectural coatings

Land use development projects as part of implementation of the 2020 LRDP Update will require all construction contractors to use architectural coatings with no or a low level of solids content (i.e., no or a low level of volatile organic compounds [VOCs]). The maximum VOC content will be 50 grams per liter.

Mitigation Measure LRDP-AQ-2d: Offset construction-generated NOx emissions in excess of SMAQMD's threshold of significance

Construction-generated emissions of NO_X would exceed the SMAQMD's threshold of significance during 2020, 2022, and 2024. Therefore, UC Davis will pay a mitigation fee in the amount of $4,558 and an administrative fee in the amount of $228 to SMAQMD to reduce the project impacts from construction NO_X emissions to a less-than-significant level. This fee will be used to fund emissions reduction projects within the SVAB. The types of projects that have been used in the past to achieve such reductions include electrification of stationary internal-combustion

engines (such as agricultural irrigations pumps); replacement of old trucks with newer, cleaner, more efficient trucks; and a host of other stationary- and mobile-source emissions-reducing projects. The fee is based on an offset cost of $30,000 per ton of NO_X and the total quantity of NO_X emissions in excess of SMAQMD's NO_X threshold (304 pounds, or 0.15 ton, based on the daily exceedances in 2020, 2022, and 2024). The administrative fee is 5 percent of the fee.

UC Davis will pay the mitigation and administrative fees in full prior to issuing a demolition or grading permit for the first project developed under the 2020 LRDP Update. For construction projects under the 2020 LRDP Update occurring during 2020, 2022, and 2024, construction contractors will provide annual construction activity monitoring data to estimate actual construction emissions. UC Davis will submit the annual construction activity monitoring data and an estimate of actual annual NO_X emissions to SMAQMD for review by February 1 of each year for the prior construction year. The annual report will reconcile paid fees for the prior year relative to actual emissions. If more emissions were generated than covered by the fees paid, UC Davis will submit payment for the deficient amount, based on an offset cost of $30,000 per ton of NO_X. If more fees were paid than needed for the emissions generated, SMAQMD will either issue UC Davis a refund for the surplus or a credit that can be applied to future fee payments.

An alternative payment plan may be negotiated by UC Davis, based on the timing of construction phases that are expected to exceed the SMAQMD's threshold of significance. Any alternative payment plan must be acceptable to SMAQMD and agreed upon in writing prior to issuance of a demolition or grading permit by UC Davis.

In coordination with SMAQMD, UC Davis, or its designee, may reanalyze construction NO_X emissions from the 2020 LRDP Update prior to starting construction to update the required mitigation and administrative fees. The analysis must be conducted using the SMAQMD-approved emissions model(s) and the fee rates published at the time of reanalysis. The analysis may include onsite measures to reduce construction emissions if deemed feasible by UC Davis. All onsite measures assumed in the analysis must be included in the construction contracts and enforceable by UC Davis.

Mitigation Measure AQ-2: Reanalyze project emissions and offset construction-generated NO_X emissions in excess of SMAQMD's threshold of significance

If the SMUD Component is constructed in 2025, construction-generated emissions of NO_X may exceed SMAQMD's threshold of significance during that year. In coordination with SMAQMD, UC Davis, or its designee, will reanalyze construction NO_X emissions in 2025 prior to starting construction of the SMUD Component. The analysis will be conducted using SMAQMD-approved emissions models and account for all project construction activity scheduled to occur in 2025 (i.e., SMUD Component, make-ready projects, CUP expansion). The analysis may include onsite measures to reduce construction emissions if deemed feasible by UC Davis. All onsite measures assumed in the analysis must be included in the construction contracts and enforceable by UC Davis.

The required mitigation fee will be based on the amount of quantified NO_X emissions in excess of SMAQMD's threshold of 85 pounds per day as well as the fee rates published at the time of reanalysis. The fee will be used to fund emissions reduction projects within the SVAB. The types of projects that have been used in the past to achieve such reductions involve electrification of stationary internal-combustion engines, such as those used with agricultural irrigation pumps;

the replacement of old trucks with newer, cleaner, more efficient trucks; and a host of other stationary- and mobile-source emissions-reducing projects.

UC Davis will pay the SMAQMD mitigation and administration fees in full prior to construction of the SMUD component. For construction occurring during 2025, construction contractors will provide annual construction activity monitoring data to estimate actual construction emissions. UC Davis will submit the annual construction monitoring data as well as an estimate of annual NO_X emissions to SMAQMD for review by February 1, 2026. The annual report will reconcile paid fees, if any, for 2025 relative to actual emissions. If more emissions were generated than covered by the fees paid, UC Davis will submit payment for the deficient amount, based on an offset cost per ton of NO_X. If more fees were paid than needed for the emissions generated, SMAQMD will issue UC Davis a refund for the surplus.

Operation

Operation of the project would generate criteria pollutant and precursors emissions from new and modified stationary (e.g., boilers) and area sources. Table 3.2-5 summarizes the modeled operation-related emissions of criteria air pollutants and precursors under existing and future conditions with the project. The net change in emissions under build-out conditions relative to existing conditions, which represent the incremental impact of the project, is compared to SMAQMD thresholds.

Table 3.2-5. Estimated Operational Criteria Pollutants and Precursors for the Project

	Maximum Daily Emissions (lb/day)				Annual Emissions (tpy)	
Source	ROG	NO_X	PM10	PM2.5	PM10	PM2.5
2019 Existing						
FSSB Lab-Wing	< 1	0	0	0	0	0
Central Utility Plant	5	58	10	10	1.4	1.4
Total 2019 Existing[a]	5	58	10	10	1.4	1.4
2030 Project						
Central Utility Plant	3	30	6	6	0.7	0.7
Central Utility Plant Annex	4	7	8	8	0.7	0.7
Total 2030 Project[a]	7	37	14	14	1.4	1.4
Comparison to Thresholds						
Net Emissions from Existing[a]	2	*-21*	3	*3*	*< 0.1*	*< 0.1*
SMAQMD Threshold[b]	65	65	80	82	14.6	15.0

Source: Appendix B.

lb/day = pounds per day; NO_X = nitrogen oxides; PM10 = particulate matter less than 10 microns in diameter; PM2.5 = particulate matter less than 2.5 microns in diameter; ROG = reactive organic gases; tpy = tons per year.

a. Sums may not total correctly because of rounding.

b. In developing these thresholds, SMAQMD considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable.

As shown in Table 3.2-5, maximum daily NO_X emissions are projected to decrease relative to existing conditions, mainly due to reduced overall campus fuel combustion and improved boiler efficiency at the CUP Annex. The slight increase in ROG is due primarily to the additional area source of the CUP Annex. The minor increases in PM are due to differences in the rated boiler emissions factors between the CUP and CUP Annex, which offset reductions achieved by reduced fuel combustion.

Overall, the net change in operational emissions resulting from implementation of the project would not exceed SMAQMD thresholds. This impact would be **less than significant**. Thus, the project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations (less than significant with mitigation)

Summary of Impact AQ-3 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	S	LRDP-AQ-2a LRDP-AQ-2b	LTS
CUP Expansion	S	LRDP-AQ-2a LRDP-AQ-2b LRDP-AQ-2c LRDP-AQ-3b	LTS
SMUD Component	S	LRDP-AQ-2a LRDP-AQ-2b	LTS
Whole Project	S	LRDP-AQ-2a LRDP-AQ-2b LRDP-AQ-2c LRDP-AQ-2d LRDP-AQ-3b AQ-2	LTS

LTS = less than significant; S = significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that, with implementation of Mitigation Measures LRDP-AQ-2a through LRDP-AQ-2d, receptor exposure to plan-related construction emissions, including localized PM, would be less than significant. However, receptor exposure to operational PM10 emissions would be significant and unavoidable, as would health risks from construction TACs.

CUP Expansion Project Impacts

Regional Criteria Pollutants

SMAQMD develops region-specific CEQA thresholds of significance in consideration of existing air quality concentrations and attainment or nonattainment designations under the NAAQS and CAAQS. Recognizing that air quality is a cumulative problem, SMAQMD typically considers impacts from projects that generate criteria pollutants and ozone precursor emissions that are below the thresholds to be minor in nature. Such projects would not adversely affect air quality or exceed the NAAQS or CAAQS. Moreover, photochemical and health risk modeling conducted by SMAQMD demonstrates that projects generating emissions below SMAQMD thresholds "do not on [their] own lead to sizeable health effects" (Ramboll 2020).

As described under Impact AQ-2, neither construction nor operation of the project would generate criteria pollutants or precursors in excess of SMAQMD thresholds with implementation of Mitigation Measures LRDP-AQ-2a through LRDP-AQ-2d and AQ-2. As such, the project would not be expected to contribute a significant level of air pollution that would degrade regional air quality within the SVAB. This impact is **less than significant with LRDP mitigation**, and the project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Consistent with the Friant Ranch Decision, Table 3.2-6 provides a conservative estimate of potential health effects associated with regional criteria pollutants generated by construction and operation of the project. Because construction emissions would not exceed SMAQMD's thresholds with implementation of Mitigation Measures LRDP-AQ-2a through LRDP-AQ-2d and AQ-2, and the net change in long-term operational emissions would be below SMAQMD's thresholds, this analysis was conducted using SMAQMD's Minor Project Health Screening Tool (version 2). The results presented in Table 3.2-6 are conservative because they are based on a source generating 82 pounds per day of ROG, NO_X, and PM2.5 each day of the year. As shown in Table 3.2-3, maximum daily mitigated emissions during all years of construction would be well below 82 pounds per day. Likewise, the net change in operational ROG, NO_X, and PM2.5 emissions resulting from implementation of the project would be well below 82 pounds per day—and even net negative for NO_X emissions compared to existing conditions. For these reasons, any increase in regional health risks associated with project-generated emissions would be less than that presented in Table 3.2-6, which already reflects a very small increase with respect to the background incident health effect.

Although implementation of the project would contribute to existing and future air pollution, it is important to consider the magnitude of project-generated emissions and potential health risks relative to ambient conditions. The increased health effects potentially associated with the project (see Table 3.2-6) would be very small relative to the background regional incident health effect. Specific to just Sacramento County, the California Department of Public Health (2023) reported an annual average of 13,136 deaths from all causes between 2019 and 2021. An estimated two deaths for a project with emissions at or below air district thresholds (Table 3.2-6) would be less than 0.02 percent of this total.

Although the estimated health effects shown in Table 3.2-6, as well as the proportion of those effects relative to the regional and county background incidence, are low, it is important to acknowledge that the model does not take into account population subgroups with greater vulnerabilities to air pollution, except in the analysis of age ranges for certain endpoints. As noted in SMAQMD's guidance, "the health effects of increased air pollution emissions may occur disproportionately in areas where the population is more susceptible to health effects from air pollution" (Ramboll 2020). The five determinants for increased susceptibility, as reported by the Centers for Disease Control and Prevention (2019), are genetics, behavior, environmental and physical influences, medical care, and social factors. The Public Health Alliance of Southern California has developed a Healthy Places Index (HPI) to characterize local community conditions, including several of these determinants. The data can be used to compare the overall relative health vulnerability of geographic areas. Based on the HPI, communities west of Stockton Boulevard and south of Broadway have lower levels of health-promoting community conditions and may experience a disproportionate rate of health effects from the project compared to communities east of Stockton Boulevard and north of the campus (Public Health Alliance of Southern California 2023).

Table 3.2-6. Conservative Estimate of Increased Regional Health Effect Incidence Resulting from Implementation of the Project (cases per year)

Health Endpoint	Age Range[a]	Annual Mean Incidences (model domain and five-air-district region)[b]	Percentage of Background Incidence (five-air-district region)[c]	Total Number of Health Incidence (five-air-district region)[d]
PM2.5 Emissions – Respiratory				
Emergency Room Visits, Asthma	0–99	1	< 1%	18,419
Hospital Admissions, Asthma	0–64	< 1	< 1%	1,846
Hospital Admissions, All Respiratory	65–99	< 1	< 1%	19,644
PM2.5 Emissions – Cardiovascular				
Hospital Admissions, All Cardiovascular[e]	65–99	< 1	< 1%	24,037
Acute Myocardial Infarction, Nonfatal	18–24	< 1	< 1%	4
Acute Myocardial Infarction, Nonfatal	25–44	< 1	< 1%	308
Acute Myocardial Infarction, Nonfatal	45–54	< 1	< 1%	741
Acute Myocardial Infarction, Nonfatal	55–64	< 1	< 1%	1,239
Acute Myocardial Infarction, Nonfatal	65–99	< 1	< 1%	5,052
PM2.5 Emissions – Mortality				
Mortality, All Cause	30–99	2	< 1%	44,766
ROG and NO_X Emissions – Respiratory				
Hospital Admissions, All Respiratory	65–99	< 1	< 1%	19,644
Emergency Room Visits, Asthma	0–17	< 1	< 1%	5,859
Emergency Room Visits, Asthma	18–99	1	< 1%	12,560
ROG and NO_X Emissions – Mortality				
Mortality, Non-Accidental	0–99	< 1	< 1%	30,386

Source: Sacramento Metropolitan Air Quality Management District 2020b.

Note: The analysis point is at 38.550763, -121.45108.

NO_X = nitrogen oxides; PM2.5 = particulate matter less than 2.5 microns in diameter; ROG = reactive organic gases

a. Affected age ranges are shown. Other age ranges are available, but the endpoints and age ranges shown here are the ones used by the EPA in health assessments. The age ranges are consistent with the epidemiological study that is the basis of the health function.

b. Health effects are shown in terms of incidences of each health endpoint and how they compare to the base (2035 base year health effect incidences or "background health incidence") values. Health effects are across the Northern California model domain and five-air-district region (rounded values are equivalent).

c. The percent of background health incidence uses the mean incidence. The background health incidence is an estimate of the average number of people who are affected by the health endpoint in a given population over a given period of time. In this case, these background incidence rates cover the five-air-district region (estimated 2035 population of 3,271,451). Health incidence rates and other health data are typically collected by the government as well as the World Health Organization. The background incidence rates used here are obtained from BenMAP, as reported in SMAQMD's Minor Project Health Screening Tool, version 2.

d. The total number of health incidences across the five-air-district region is based on modeling data, as reported in SMAQMD's Minor Project Health Screening Tool, version 2. The information is presented to assist in providing overall health context.

e. Fewer myocardial infarctions.

Sacramento County has not attained the ozone, PM2.5, or PM10 NAAQS. Certain individuals residing in areas that do not meet ambient air quality standards could be exposed to pollutant concentrations that could cause or aggravate acute and/or chronic health conditions (e.g., asthma) or result in lost work days or even premature mortality, regardless of implementation of the project.

Mitigation Measures

Mitigation Measure LRDP-AQ-2a: Reduce construction-generated fugitive dust

Refer to measure description under Impact AQ-2.

Mitigation Measure LRDP-AQ-2b: Reduce construction-generated emissions from equipment and vehicle exhaust

Refer to measure description under Impact AQ-2.

Mitigation Measure LRDP-AQ-2c: Reduce evaporative emissions during the application of architectural coatings

Refer to measure description under Impact AQ-2.

Mitigation Measure LRDP-AQ-2d: Offset construction-generated NOx emissions in excess of SMAQMD's threshold of significance

Refer to measure description under Impact AQ-2.

Mitigation Measure AQ-2: Reanalyze project emissions and offset construction-generated NOx emissions in excess of SMAQMD's threshold of significance

Refer to measure description under Impact AQ-2.

Localized Particulate Matter

During earthmoving activities required for construction, localized fugitive dust would be generated. The amount of dust generated by a project is highly variable and dependent on the size of the disturbed area at any given time, the amount of activity, soil conditions, and meteorological conditions. Despite this variability in emissions, SMAQMD (2020c:3-8) acknowledges that there are numerous control measures that can be reasonably implemented to significantly reduce construction fugitive dust emissions. Mitigation Measure LRDP-AQ-2a requires regular watering, covering of materials, and other practices that will reduce construction-related fugitive dust emissions by up to 74 percent, depending on the construction year and emissions source. Mitigation Measure LRDP-AQ-2b would reduce exhaust-related PM. With implementation of Mitigation Measures LRDP-AQ-2a and LRDP-AQ-2b, neither PM2.5 nor PM10 emissions would exceed SMAQMD's thresholds of significance (see Table 3.2-3). Accordingly, localized PM emissions would be **less than significant with LRDP mitigation** and would not expose receptors to substantial pollutant concentrations or risks. The project would not result in a new or more severe impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-AQ-2a: Reduce construction-generated fugitive dust

Refer to measure description under Impact AQ-2.

Mitigation Measure LRDP-AQ-2b: Reduce construction-generated emissions from equipment and vehicle exhaust

Refer to measure description under Impact AQ-2.

Asbestos

According to the California Department of Conservation's *A General Location Guide for Ultramafic Rocks in California*, there are no geologic features normally associated with naturally occurring asbestos (NOA) (i.e., serpentine or ultramafic rock) in or near the UC Davis Sacramento Campus (California Department of Conservation 2000). As such, there is no potential for impacts related to NOA emissions during construction activities.

Demolition as well as the renovation of existing structures may disperse asbestos-containing materials (ACMs) to adjacent sensitive-receptor locations. ACMs were commonly used as fireproofing and insulating agents prior to the 1970s. The U.S. Consumer Product Safety Commission banned use of most ACMs in 1977 due to their link to mesothelioma. However, buildings constructed prior to 1977 may have used ACMs and therefore could expose receptors to asbestos, which may become airborne with other particulates during demolition.

All demolition and renovation activities would be subject to the EPA's asbestos-related National Emission Standards for Hazardous Air Pollutants (NESHAP). Asbestos regulations protect the public by minimizing the release of asbestos fibers during activities involving the processing, handling, and disposal of ACMs. The asbestos NESHAP regulations for demolition and renovation are referenced in SMAQMD Rule 902. Consequently, regulatory mechanisms exist to ensure that impacts from ACM, if present during demolition and renovation occurring under the project, would be **less than significant**. The project would not result in a new or more severe impact than previously disclosed in the 2020 LRDP Update SEIR.

Other Toxic Air Contaminants

Construction

Construction of the project has the potential to create inhalation health risks at receptor locations within and adjacent to the UC Davis Sacramento Campus. The potential for project-generated TAC emissions to affect human health is typically assessed in terms of an increase in cancer risk and non-cancer health effects. Cancer risk is expressed as an incremental increase per million individuals. Non-cancer health effects are assessed by use of an HI, which is the sum of the ratios of different contaminants' hazard quotients.[7] With respect to emissions sources during construction, the cancer and non-cancer risk from exposure to diesel exhaust is much higher than the risk associated with

[7] The hazard quotient is determined for each TAC by comparing the modeled exposure level at a particular receptor location to the acceptable exposure level for a particular contaminant; in other words, a hazard quotient is the fraction of a non-cancer health effect's threshold, for a particular contaminant, experienced by a person at a particular location.

any other TAC from construction. Accordingly, DPM is the focus of the construction health risk assessment.

Construction would result in DPM emissions, primarily from diesel-fueled off-road equipment and heavy-duty trucks. Table 3.2-7 presents the maximum estimated health risks at receptor locations from exposure to DPM generated by construction of the make-ready projects and CUP Expansion Project (excluding the SMUD Component). Receptors include recreational, residential, educational, and medical facilities, as shown in Figure 3.2-1. The "existing" receptors are those present at the start of construction in 2024 and within 1,000 feet of construction areas. "New" receptors are those present after 2024 but in place before the end of construction in 2029. Both unmitigated risks and risks with implementation of Mitigation Measure LRDP-AQ-2b are presented in Table 3.2-7. Mitigation Measure LRDP-AQ-2b would be required to reduce exhaust emissions from construction equipment and vehicles, as described under Impact AQ-2; therefore, it would reduce associated health risks directly.

Table 3.2-7. Estimated Maximum Cancer and Chronic Hazard Risks from Construction-Generated DPM for the Make-Ready Projects and CUP Expansion (Excluding the SMUD Component)

	Cancer Risk (per million)		HI (unitless)	
Receptor Type	**Unmitigated**	**Mitigated**	**Unmitigated**	**Mitigated**
Recreational (Shriners playground)	0.3	0.2	0.01	0.01
Recreational (Aggie Square Phase I)	2.9	2.0	0.10	0.08
Recreational (other)	1.8	1.0	0.05	0.03
Residential (Aggie Square Phase I)	7.1	4.7	0.01	< 0.01
Residential (off-campus)	9.0	3.6	0.01	< 0.01
Medical (Shriners Children)	1.6	1.0	< 0.01	< 0.01
Medical (Rehabilitation Hospital)	1.9	1.0	< 0.01	< 0.01
Educational (Language Academy)	**13.6**	4.7	0.02	0.02
SMAQMD Threshold	10	10	1	1

Source: Appendix B. All values have been rounded to the nearest whole number.
Note: **Bold underline** with an asterisk (*) indicates an exceedance of SMAQMD's threshold.
HI = hazard index

As shown in Table 3.2-7, construction activities could expose existing educational receptors to a significant increase in cancer risk. However, Mitigation Measure LRDP-AQ-2b would reduce DPM and corresponding health risks, as shown in Table 3.2-7, to a level below the SMAQMD cancer risk threshold for educational receptors. Construction of the SMUD Component would also result in temporary emissions of DPM. These emissions would occur along the transmission alignment rather than being concentrated at a single construction site. Thus, receptors would be exposed to emissions for only a short period, based on incremental construction activities occurring along a linear plan. Moreover, DPM emissions would be reduced through implementation of Mitigation Measure LRDP-AQ-2b. Based on the modeled results for the make-ready projects and CUP Expansion Project (Table 3.2-7), which require more construction activity over a longer period, it can reasonably be concluded that potential health risks from receptor exposure to DPM generated by construction of the SMUD Component would not exceed SMAQMD's thresholds. Accordingly, this impact is determined to be **less than significant with mitigation.**

Mitigation Measures

Mitigation Measure LRDP-AQ-2b: Reduce construction-generated emissions from equipment and vehicle exhaust

Refer to measure description under Impact AQ-2.

Operation

Although the project would not increase emergency generator operation at the CUP, it would relocate three diesel generators to the CUP Annex, relative to what was analyzed in the California Hospital Tower Project EIR. The location of emissions generated by gas combustion would also change with implementation of the project. Specifically, the concentration of emissions at the CUP would decrease commensurate with the reduction in gas consumption at the CUP, while additional emissions would be generated by the four new boilers at the CUP Annex. Table 3.2-8 presents the maximum estimated health risks at receptor locations from exposure to operational TAC emissions under existing and project conditions. Like the construction health risk assessment, potential risks were estimated at onsite and offsite recreational, residential, educational, and medical receptors, as shown in Figure 3.2-1. The operational HRA includes the future onsite residential building north of the CUP Annex. The net change in health risk is compared to SMAQMD thresholds.

Table 3.2-8. Estimated Maximum Cancer and Hazard Risks from Operations-Generated TAC under Existing and Project Conditions

	Existing Conditions			Project Conditions			Net Change[a]		
	Cancer	HI (unitless)		Cancer	HI (unitless)		Cancer	HI (unitless)	
Receptor Type	Risk[b]	Acute	Chronic	Risk[b]	Acute	Chronic	Risk[b]	Acute	Chronic
Recreational (Shriners playground)	0.1	< 0.01	0.01	0.2	0.02	0.03	0.1	0.01	0.02
Recreational (Aggie Square Phase I)	0.1	0.01	0.01	0.2	0.08	0.05	0.1	0.07	0.04
Recreational (other)	0.4	0.01	0.01	0.6	0.03	0.13	0.3	0.02	0.12
Residential (Aggie Square Phase I)	0.5	0.01	<0.01	0.6	0.03	< 0.01	0.1	0.03	< 0.01
Residential (off campus)	11.6	0.01	0.03	12.3	0.03	0.04	0.6	0.02	0.02
Residential (new on campus)	—[c]	—[c]	—[c]	15.7	0.08	0.07	**15.7**	0.08	0.07
Medical (Shriners Children)	0.2	< 0.01	< 0.01	0.3	< 0.01	< 0.01	0.1	< 0.01	< 0.01
Medical (Rehabilitation Hospital)	0.2	< 0.01	< 0.01	0.2	0.01	< 0.01	0.1	0.01	< 0.01
Educational (Language Academy)	0.5	0.01	0.01	1.3	0.05	0.13	0.8	0.03	0.12
SMAQMD Threshold	—	—	—	—	—	—	10	1	1

Source: ICF modeling (Appendix B).
Note: **Bold underline** with an asterisk (*) indicates an exceedance of SMAQMD's threshold.
HI = hazard index
[a] Project minus existing.
[b] Risk per million people.
[c] Building does not exist under current conditions.

As shown in Table 3.2-8, receptors would be exposed to varying levels of cancer and non-cancer health hazards under both existing and project conditions. Implementation of the project would slightly increase estimated risks at modeled existing receptor locations, but the incremental change would be below SMAQMD's thresholds. However, the estimated cancer risk at the new on-campus residential building would be significant before mitigation. Mitigation Measure LRDP-AQ-3b would require all generators to use renewable diesel. In addition, it outlines best available control

technology for generators at the CUP to reduce DPM emissions and associated health risks. As cited in the 2020 LRDP Update SEIR, renewable diesel would reduce PM10 emissions and the corresponding risk contribution from existing CUP generators by 30 percent. Implementation of control technologies would reduce the risk by an additional 39 to 89 percent, depending on the option selected. Thus, with implementation of Mitigation Measure LRDP-AQ-3b, the estimated cancer at the new on-campus residential building from exposure to project generated emissions would be reduced to 3.0 to 7.8 per million, which is below SMAQMD's threshold of significance (see Appendix B). This impact would be **less than significant with mitigation**. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-AQ-3b: Reduce receptor exposure to operations generated toxic air contaminants

UC Davis will require all diesel emergency generators on the Sacramento Campus to use renewable diesel fuel. Renewable diesel must meet the most recent ASTM D975 specification for ultra low-sulfur diesel and have a carbon intensity no greater than 50 percent of the diesel with the lowest carbon intensity among petroleum diesel fuels sold in California. All diesel generators must be transitioned to renewable diesel fuel no later than December 31, 2039.

UC Davis will employ a tiered approach to reduce further sensitive-receptor exposure to TACs generated by the Sacramento Campus Central Energy Plant. The selected control strategy must be implemented prior to December 31, 2039. The approach will be implemented as follows:

- Replace at least three of the existing Tier 0 generators with engines that meet EPA Tier 4 Final or better emission standards.

If the engine cannot be replaced, then:

- Require at least three of the existing Tier 0 generators to operate with the most effective CARB Verified Diesel Emissions Controls (VDECs) available for the engine type (effectively Level 3).

If the engine cannot be retrofitted with VDECs, then:

- Require all existing Tier 0 generators without VDECs to increase the stack height by at least 20 feet.

Impact AQ-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people (less than significant)

Summary of Impact AQ-4 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	LTS	None	—
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that the plan would not cause odor effects or expose receptors to adverse odors.

CUP Expansion Project Impacts

SMAQMD (2016:7-2) considers wastewater treatment plants, landfills, composting and recycling facilities, petroleum refineries, asphalt batch plants, chemical and fiberglass manufacturing plants, painting/coating operations, rendering plants, coffee roasters, food packaging facilities, dairies, and metal smelting plants to be potential odor-emitting facilities. Construction activities would require the use of diesel-fueled equipment, architectural coatings, and asphalt paving, all of which can have an associated odor. However, these odors are generally not pervasive enough to cause objectionable odors that would affect a substantial number of people. Operation of the project could likewise result in minor levels of odor emissions from natural gas combustion. However, the project land uses are not considered to be significant sources of odors, per SMAQMD (2016:7-2) guidance. In addition, the project would not be located near any potentially significant sources of odors for which complaints have been rendered. The nearest potential odor-generating facility to the campus is the Naked Coffee Roaster, which has not received any odor complaints in the past 3 years. Likewise, there have been no odor complaints made to SMAQMD against the UC Davis Sacramento Campus in the past 3 years (Muller pers. comm.).

Based on the above analysis, the project would not cause odor effects or expose receptors to adverse odors. The impact would be **less than significant,** and the project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

3.3 Biological Resources

This section describes the regulatory and environmental setting for biological resources in the Central Utility Plant (CUP) Expansion Project area, analyzes effects on biological resources that would result from implementation of the CUP Expansion Project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable. No comments specific to biological resources were received during the Notice of Preparation comment period.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2020 Long Range Development Plan Update Supplemental Environmental Impact Report* (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150(c)). Refer to Chapter 1, *Introduction*, of this document for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.3.1 Existing Conditions

3.3.1.1 Regulatory Setting

Section 3.3 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for biological resources. The following discussion summarizes Section 3.3.1 of the 2020 LRDP Update SEIR and applicable updates since 2019.

University of California

As noted in Section 3.0.2, *University of California Autonomy*, the University of California (UC or University), Davis, as a constitutionally created State entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the UC that are in furtherance of its educational purposes. However, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

UC Davis Tree Protection Standards

The UC Davis main campus has recognized two categories of on-campus trees that meet standards for important trees. These tree protection standards are applied to the Sacramento Campus, as they were for the 2020 LRDP Update SEIR. Campus development projects avoid removal of these trees whenever possible. Important trees include:

- Heritage Trees: Healthy valley oak trees with trunk diameters of 33 inches or greater at a height of 24 inches from the ground.
- Specimen Trees: Healthy trees or stands of trees that are of high value to the campus because of their size, species, extraordinary educational and research value, and other exceptional local importance.

Federal

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA) (Title 16 of the United States Code Section 1531 et seq.), the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration, National Marine Fisheries Service regulate the "taking" of species listed in the ESA as threatened or endangered. In general, persons subject to the ESA (including public agencies) are prohibited from "taking" endangered or threatened fish and wildlife species and from "taking" endangered or threatened plants in areas under federal jurisdiction or in violation of State law. Under Section 9 of the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take. This project would not involve federal permits, and interagency cooperation under Section 7 of the ESA is not anticipated.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it is unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. Under the MBTA, "take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities." Take does not include habitat destruction or alteration, if there is not a direct taking of birds, nests, eggs, or parts thereof. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations, Section 10.13. The list includes nearly all birds that are native to the United States.

State

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA), a permit from the California Department of Fish and Wildlife (CDFW) is required for projects that could result in the "take" of a plant or animal species listed by the State as threatened or endangered. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the CESA definition of take does not include "harm" or "harass," like the ESA definition does. As a result, the threshold for take is higher under the CESA than under the ESA. Authorization for take of State-listed species can be obtained through a California Fish and Game Code Section 2081 incidental take permit.

California Native Plant Protection Act

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act (NPPA), which directed the California Department of Fish and Game (now CDFW) to carry out the legislature's intent to "preserve, protect, and enhance endangered plants in this state." The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. The CESA expanded upon the original NPPA and enhanced legal protection for plants. The CESA established threatened and endangered species categories and grandfathered all rare animals—but not rare plants—into

the NPPA as threatened species. Therefore, there are three listing categories for plants in California: Rare, Threatened, and Endangered.

California Fish and Game Code Sections 3503 and 3503.5

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adult birds to abandon the nest, resulting in loss of eggs or young.

Fully Protected Species

Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code describe the take prohibitions for fully protected birds, mammals, reptiles and amphibians, and fish. Species listed under these statutes may not be taken or possessed at any time and no incidental take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock.

Regional and Local

City of Sacramento Tree Ordinance

Under the City of Sacramento tree ordinance (Ordinance 2016-0026), a permit is required to perform regulated work on "City Trees" or "Private Protected Trees" (which include trees formerly referred to as "Heritage Trees"). City trees are characterized as trees partially or completely growing in a City park, on City-owned property, or on a public right-of-way, including any street, road, sidewalk, park strip, mow strip, or alley. Private Protected Tree is defined as a tree that is designated to have special historical value, special environmental value, or significant community benefit, and is on private property. Private Protected Trees are:

- All native trees at 12-inch diameter measured at standard height (DSH), which is 4.5 feet above ground level. Native trees include coast, interior, valley, and blue oaks; California sycamore; and buckeye.
- All trees at 32-inch DSH growing on land with an existing single-family or duplex dwelling.
- All trees at 24-inch DSH growing on undeveloped land or any other type of property such as commercial, industrial, and apartments.

Sacramento Municipal Utility District (SMUD) construction of facilities for the production and transmission of electrical energy by a local agency like SMUD is exempt from county and city zoning and building ordinances (Government Code 53091(d, e)), except that for transmission projects equal to or greater than 100 kilovolts, a city or county may require such projects to undergo a consistency determination if so provided under a local ordinance. The County of Sacramento reviews projects pursuant to Section 3.6.6.A of the County Code to determine if project siting is consistent with the County General Plan. The City of Sacramento reviews projects pursuant to Section 17.288.500–17.288.550, Article V. High Voltage Transmission Facilities, of the City Code. SMUD considers the policies of local jurisdictions that are intended to reduce or avoid significant environmental impacts.

3.3.1.2 Environmental Setting

Section 3.3 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the environmental setting for biological resources, which includes the CUP Expansion Project site. The project site is largely unchanged from the 2020 LRDP Update (UC Davis 2020). The Sacramento Campus is in an urban setting and is heavily developed. Vegetation on the campus consists mostly of urban landscaping and both native and nonnative trees. The CUP Expansion Project site is largely paved and does not contain ruderal or aquatic habitat. As part of the Facility Support Services Building (FSSB) lab wing demolition and Parking Structure 6 new entry, approximately 50 trees would be removed, several of which are "city trees."

Two routes are being analyzed for a new underground feeder from the SMUD East City Substation to the CUP Expansion Project site (Figure 2-6). Both routes are in a fully developed area of the city that is designated for Public/Quasi-public, Employment Center Low Rise, Traditional Neighborhood High Density and Low Density, and Urban Center Low Density land uses (City of Sacramento 2017). These developed areas largely contain private residences with tree-lined streets.

3.3.2 Environmental Impacts

This section describes the environmental impacts associated with biological resources that would result from implementation of the CUP Expansion Project. It describes the methods used to determine the effects of the CUP Expansion Project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts are provided, if applicable.

3.3.2.1 Methods for Analysis

The analysis of potential impacts on biological resources resulting from construction and operation of the CUP Expansion Project is based on a comparison of baseline conditions, as described in Section 3.3.1.2, *Environmental Setting*, to expected conditions during and after construction of the project. Evaluation of potential biological resource impacts is based on a review of existing species occurrence data and habitat requirements of species that could occur in the project area and vicinity. Refer to Section 3.3, *Biological Resources*, in the 2020 LRDP Update SEIR for a further discussion of methods for analysis and review of species lists databases.

3.3.2.2 Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the CUP Expansion Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- A substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- A substantial adverse effect on State- or federally protected wetlands (e.g., marshes, vernal pools, coastal wetlands) through direct removal, filling, hydrological interruption, or other means.

- Substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedance of the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.

Issues Not Evaluated Further

As discussed in Section 3.3.1, *Existing Conditions*, under *Environmental Setting* in the 2020 LRDP Update SEIR, the special-status plants evaluation concludes that there is no suitable habitat for any special-status plants known to occur in the region surrounding the campus, and no special-status plant species are expected to occur in the CUP Expansion Project area because of its developed and highly disturbed condition. The discussion in the 2020 LRDP Update SEIR additionally found that no riparian or sensitive natural communities occur on the campus. The section finds that no waters of the United States or waters of the state are present on the campus. Additionally, there are no habitat conservation plans or natural community conservation plans that encompass the project area. Because the campus, and, therefore, the project area, does not support any special-status plant habitat, riparian habitat, sensitive natural communities, or State- or federally protected wetlands, and there are no habitat conservation plans or natural community conservation plans that encompass the project area, these resources are not addressed further in this analysis.

3.3.2.3 Impacts and Mitigation Measures

Impact BIO-1: Potential adverse impacts on valley elderberry longhorn beetle

Summary of Impact BIO-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	NI	None	-
Whole project	LTS	None	-

NI = no impact; LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that implementation of the 2020 LRDP Update could result in temporary construction disturbances and permanent modification to the central campus major open space that supports nine elderberry shrubs. These shrubs were evaluated during a field reconnaissance and were not expected to be occupied by valley elderberry longhorn beetle. The impact was determined to be less than significant.

CUP Expansion Project Impacts

A landscaped bioswale would be constructed in the eastern portion of the major campus open space area, near an existing elderberry shrub. Elderberry shrubs are considered potential habitat for valley elderberry longhorn beetle; however, the elderberry shrubs in the campus major open space are unlikely to be occupied by valley elderberry longhorn beetle because they were planted during development of the campus major open space area, are not part of a riparian zone, and are separated from known occurrences of valley elderberry longhorn beetle and suitable riparian habitat by dense urban development. As stated in the 2020 LRDP Update SEIR, the location of these shrubs, in combination with the lack of exit holes, indicate that valley elderberry longhorn beetle is not likely to be present within the project area and is not likely to colonize the project area in the future because the shrubs are more than 2,500 feet from known occupied habitat or suitable riparian habitat. The removal of the FSSB lab wing and construction of the new Parking Structure 6 entry or other project components would not result in the loss of any elderberry shrubs in the major open space area. Construction of the bioswale may result in the removal of one elderberry shrub, however, as stated previously, the shrubs on the Sacramento campus are unlikely to be colonized, are not connected to suitable riparian habitat, and therefore valley elderberry longhorn beetle is unlikely to be present. Therefore, the impact on valley elderberry longhorn beetle habitat would remain ***less than significant*** and no mitigation is required. The CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures are necessary.

Impact BIO-2: Disturbance of vegetation-nesting migratory birds and raptors, including Swainson's hawk and white-tailed kite

Summary of Impact BIO-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	S	LRDP-BIO-2	LTS
CUP Expansion	S	LRDP-BIO-2	LTS
SMUD Component	S	LRDP-BIO-2	LTS
Whole project	S	LRDP-BIO-2	LTS

LTS = less than significant; S = significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that construction activities associated with implementation of the 2020 LRDP Update could disturb nesting Swainson's hawks, white-tailed kites, and other nesting migratory birds and raptors. Construction-related disturbances that result in nest abandonment or failure or mortality of chicks or eggs of migratory birds and raptors would violate the MBTA and California Fish and Game Code Sections 3503, 3503.5, or 3511. Implementation of Mitigation Measure LRDP-BIO-2 was included to reduce the impact to a less-than-significant level; therefore, this impact was determined to be less than significant with mitigation.

CUP Expansion Project Impacts

The CUP Expansion Project area contains scattered trees, shrubs, and patchy ruderal grassland, partially within and adjacent to the heavily vegetated area in the campus major open space that provides nesting opportunities for Swainson's hawk, white-tailed kite, and other migratory birds and raptors. There are mature trees lining the residential streets of both potential SMUD routes, which also provide potential nesting sites for migratory birds and raptors.

According to the 2020 LRDP Update SEIR, there are numerous nesting records for Swainson's hawk and several records for white-tailed kite along the Sacramento and American Rivers near the project area. Swainson's hawks have also been reported to nest in urban areas within Sacramento. If active migratory bird or raptor nests are present within or near areas proposed for construction as part of the CUP Expansion Project, construction activities could result in the removal of active nests or disturbance of nesting birds, potentially resulting in nest abandonment, nest failure, or mortality of chicks or eggs.

The loss or disturbance of actively nesting migratory birds and raptors, including Swainson's hawk and white-tailed kite, is considered potentially significant.

Implementation of Mitigation Measure LRDP-BIO-2 from the 2020 LRDP Update SEIR would reduce this impact to a less-than-significant level and therefore the impact would be ***less than significant with LRDP mitigation***. The CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-BIO-2: Conduct preconstruction surveys for nesting migratory birds and raptors, including special-status species, and establish protective buffers

For any projects implemented under the 2020 LRDP Update that would require vegetation removal (i.e., trees, shrubs, and ruderal vegetation) or would result in construction disturbances in the vicinity of vegetated areas, the following measures will be implemented prior to initiation of construction to avoid and minimize impacts to Swainson's hawk, white-tailed kite, and other vegetation-nesting migratory birds and raptors, and to avoid violation of the MBTA, CESA, and California Fish and Game Code Sections 3503, 3503.5, and 3511.

- For construction activities that occur during the nesting season for migratory birds and raptors, between February 15 and August 31, the University will ensure that a qualified wildlife biologist familiar with the nesting behavior of bird species that occur in the plan area to conduct a preconstruction nesting bird survey. The nesting bird surveys will be conducted no more than 14 days prior to vegetation removal or construction disturbance activities near nesting habitat. The survey will include a search of all trees and shrubs, and ruderal areas that provide suitable nesting habitat for birds and raptors within the construction disturbance area. In addition, a 600-foot area around the construction area will be surveyed for nesting raptors and a 100-foot area around the construction area will be surveyed for songbirds.
- If no special-status raptor species (i.e., Swainson's hawk or white-tailed kite) or active bird or raptor nests are detected during the preconstruction surveys, then no additional measures are required. If an active nest is found in the survey area, a no-disturbance buffer will be established to avoid disturbance or destruction of the nest site until the end of the

breeding season (generally August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the construction area (this date varies by species). The extent of these buffers will be determined by a qualified biologist in coordination with any applicable agencies (as determined by species), and will depend on the level of noise or construction disturbance taking place, the line-of-sight between the nest and the disturbance, ambient levels of noise and other non-project disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species; however, a minimum of 50 feet for songbirds and 300 feet for raptors is typical. In developed habitats, buffer areas may be adjusted based on presence of existing barriers.

Impact BIO-3: Disturbance of structure-nesting migratory birds, including purple martin

Summary of Impact BIO-3 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	S	LRDP-BIO-3	LTS
CUP Expansion	NI	-	-
SMUD Component	NI	-	-
Whole project	S	LRDP-BIO-3	LTS

NI = no impact; LTS = less than significant; S = significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that construction activities associated with implementation of the 2020 LRDP Update that remove or modify existing building or parking structures could disturb an active purple martin or other structure-nesting migratory bird nest. These activities could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance or loss of a purple martin nest, or that of another migratory bird, would violate the MBTA and California Fish and Game Code Section 3503. Implementation of Mitigation Measure LRDP-BIO-3 was determined to reduce this impact to a less-than-significant level.

CUP Expansion Project Impacts

The CUP Expansion Project includes demolition of the northeast corner of the FSSB storage building. No structures would be disturbed to construct either of the SMUD feeders. Existing structures provide potential nesting areas for purple martins and other urban-dwelling non-special-status bird species, such as barn swallows (*Hirundo rustica*) and white-throated swifts (*Aeronautes saxatalis*). Purple martins are a colonial, cavity-nesting species that adapts well in urban areas, often using abandoned woodpecker holes, human-made nest boxes, or cavities in other structures such as bridges and overpasses. In the Sacramento area, purple martins most commonly nest in drain holes on the underside of highway and major road crossings, often in the vicinity of a water source to provide foraging habitat (Airola and Kopp 2018). Although there are no previous nesting records in the project area, purple martins could utilize crevices and drain holes in existing structures within the project area for nesting. If active migratory bird nests are present within existing structures proposed for construction or demolition activities, these activities could result in the removal of active nests or disturbance of nesting birds, potentially resulting in nest abandonment, nest failure, or mortality of chicks or eggs. Loss or disturbance of actively nesting migratory birds, including purple martin, would be a significant impact.

Implementation of Mitigation Measure LRDP-BIO-3 from the 2020 LRDP Update SEIR would reduce this impact to a ***less-than-significant*** level. The CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-BIO-3: Modify existing structures during the non-breeding season for purple martin and other structure-nesting migratory birds or implement exclusion measures to deter nesting

For any projects implemented under the 2020 LRDP Update that would modify or demolish any existing building structures, the following measures will be implemented prior to initiation of construction to avoid and minimize impacts on purple martins and other structure-nesting migratory birds, and to avoid violation of the MBTA and California Fish and Game Code Section 3503.

- Conduct building demolition and modification activities during the non-breeding season for structure-nesting migratory birds (generally September 1 through January 31). If this is not possible, the University will implement the following avoidance measures.
- Prior to the start of each phase of demolition/construction that is anticipated to occur during the migratory bird breeding season (generally February through August), the University will retain a qualified wildlife biologist to thoroughly inspect structures that would be modified or disturbed to locate remnant bird nests or areas such as drain holes or crevices that could be used as nesting areas by migratory birds such as purple martins. It is preferable to perform this survey in the non-breeding season (September 1 through January 31) so that if nests are found and are determined to be inactive, they may be removed.
- After inactive nests are removed and prior to construction that would occur between February 1 and August 31, known or potential nesting areas on or within the building structure to be modified or demolished will be covered with a suitable exclusion material that will prevent birds from nesting (i.e., 0.5- to 0.75-inch mesh netting, plastic tarp, or other suitable material safe for wildlife). Portions of the existing structures containing drain holes or crevices that would be modified or disturbed also will be covered or filled with suitable material to prevent nesting (i.e., fiberglass insulation, foam padding, and polyvinyl chloride [PVC]/acrylonitrile butadiene styrene [ABS] caps). The University will ensure that a qualified wildlife management specialist experienced with installation of bird exclusion materials will ensure that exclusion devices are properly installed and will avoid inadvertent entrapment of migratory birds. All exclusion devices will be installed before February 1 and will be monitored throughout the breeding season (typically several times a week). The exclusion material will be anchored so that birds cannot attach their nests to the structures through gaps in a net.
- Exclusion devices for migratory birds will be installed consistent with bat exclusion measures and in a manner that does not entrap day-roosting bats.
- If exclusion material is not installed on structures prior to February 1 and migratory birds colonize a structure, removal or modification to that portion of the structure may not occur until after August 31, or until a qualified biologist has determined that the young have fledged and the nest is no longer in use.

- If surveys determine that no active bird nests are present within existing structures to be modified or demolished and appropriate steps are taken to prevent migratory birds from constructing new nests as described in the preceding measures, work can proceed at any time of the year.

Impact BIO-4: Disturbance of structure-roosting bats

Summary of Impact BIO-4 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	S	LRDP-BIO-4	LTS
CUP Expansion	NI	-	-
SMUD Component	NI	-	-
Whole project	S	LRDP-BIO-4	LTS

NI = no impact; LTS = less than significant; S = significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that construction activities associated with implementation of the 2020 LRDP Update that remove or modify existing building or parking structures could disturb structure-roosting bats during the maternity or hibernation period. Because structure-roosting bats often occur in large colonies, removal or disturbance of a roost site could result in the loss of many bats, which could result in a substantial decrease in the local population of native bats. Implementation of Mitigation Measure LRDP-BIO-4 from the 2020 LRDP SEIR was determined to reduce this impact to a ***less-than-significant*** level.

CUP Expansion Project Impacts

Modification or disturbance of the FSSB could affect structure-roosting bats such as the Mexican free-tailed bat (*Tadarida brasiliensis*), little brown bat (*Myotis lucifugus*), and Yuma myotis (*Myotis yumanensis*) during the maternity season or hibernation period. Bats play important roles in California ecosystems and offer important benefits to humans, including the control of mosquitos and crop-damaging insects. Potential roosting habitat for bats in the project area includes crevices and dark, enclosed spaces within buildings, drain holes, attics, tile roofs, and other suitable crevices that provide the appropriate thermal and physical conditions for day-roosting bats. Even if an active bat roost is not directly affected (i.e., by removal of a section of a building where the roost occurs), noise generated from construction activities could be loud and create vibrations within the structure that could disturb bats during the day when they are asleep.

Construction activities could result in injury or mortality of bats if occupied roost sites are removed or disturbed at times when bats are present and are either not able to escape the roost site (e.g., early in the day, periods of cold weather) or have young. This impact would be significant.

Implementation of Mitigation Measure LRDP-BIO-4 from the 2020 LRDP Update SEIR would reduce this impact to a ***less-than-significant*** level. The CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-BIO-4: Conduct pre-construction surveys for roosting bats and implement protection measures

Baseline data about how bats may use structures in the plan area, their individual numbers, or how they vary seasonally are not available. Daily and seasonal variations in habitat use by bats is common. To obtain the highest likelihood of detection, the following pre-construction bat surveys will be conducted within the construction area prior to modification or demolition of existing building structures. If surveys determine that bats are roosting in the construction area, the University will implement the following protective measures.

Conduct Pre-Construction Surveys at Structures

- Before work begins on any building or structure, qualified biologists will conduct a daytime search for bat signs and evening emergence surveys to determine whether the structure is being used as a roost. Biologists conducting daytime surveys will listen for audible bat calls and will use the naked eye, binoculars, and a high-powered spotlight to inspect crevices, drain holes, and other visible features that could house bats. Building surfaces and the ground around the structure will be surveyed for bat signs, such as guano, staining, and prey remains. Surveys will occur no earlier than two weeks prior to the construction start-date.
- Qualified biologists also will conduct evening emergence surveys at structures that contain suitable roosting areas. The surveys will consist of at least one biologist stationed near potential entry and exit points of the structure watching for emerging bats from a half hour before sunset to 1–2 hours after sunset for a minimum of 2 nights at each survey location within the season that construction would be taking place. Surveys may take place over several nights to fully cover the extent of structure work. All emergence surveys will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted). Survey methodology may be supplemented as new research identifies advanced survey techniques and equipment that would aid in bat detections. Acoustic detectors will be used during emergence surveys to obtain data on bat species present in the survey area at the time of detection.
- If a building or structure proposed for modification or demolition is identified as supporting an active bat roost, additional surveys may be required to determine how the structure is used by bats—whether it is used as a night roost, maternity roost, migration stopover, or for hibernation.

Identify Protective Measures for Bats Using Structures

- If it is determined that bats are using building structures within or adjacent to the construction area as roost sites, the University will coordinate with CDFW to identify protective measures to avoid and minimize impacts on roosting bats based on the type of roost and timing of activities. These measures could include the following actions.
    - If a non-maternity roost is located within a structure that would be modified or disturbed in a manner that would expose the roost, bats will be excluded from the structure by a qualified wildlife management specialist working with a bat biologist. An exclusion plan will be developed in coordination with CDFW that identifies the type of exclusion material/devices to be used, the location and method for installing the

devices, and monitoring schedule for checking the effectiveness of the devices. Exclusion devices will be installed between September 15 and October 31 to avoid affecting maternal and hibernating bat roosts and will take place during weather and temperature conditions conducive to bat activity. Because bats are expected to tolerate temporary construction noise and vibrations, bats will not be excluded from structures if no direct impacts on the roost are anticipated.

- An alternative to installing exclusion devices would be to make structural changes to a known roost proposed for removal to create conditions in the roost that are undesirable to roosting bats and encourage the bats to leave on their own (e.g., open additional portals so that the temperature, wind, light, and precipitation regime in the roost change). Structural changes to the roost will be authorized by CDFW and will be performed during the appropriate exclusion timing (listed above) to avoid harming bats.
- If a maternity roost is located, whether solitary or colonial, that roost will remain undisturbed until September 15 or until a qualified biologist has determined that the roost is no longer active.

Impact BIO-5: Conflict with a local policy or ordinance protecting biological resources, such as a tree preservation policy or ordinance

Summary of Impact BIO-5 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	S	BIO-5	LTS
Whole project	LTS	None	-

NI = no impact; LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that implementation of the 2020 LRDP Update could result in the removal of heritage or specimen trees, although none were noted during the reconnaissance survey in March 2020. As a constitutionally created State entity, the University is not subject to municipal regulations, including the City of Sacramento policies and ordinances. However, the UC Davis main campus tree protection standards were used, and it was determined that if implementation of the 2020 LRDP Update would result in removal of heritage or specimen trees, this impact would be significant. No heritage or specimen trees were observed; however, Mitigation Measures LRDP-BIO-5a and LRDP-BIO-5b were implemented to ensure that heritage or specimen trees are protected, and the impact was determined to be ***less than significant with mitigation***.

CUP Expansion Project Impacts

Trees in the project area that meet the City's standard for protected trees include those planted as part of landscaping along 2nd Avenue. These trees are subject to the City's tree preservation ordinance, which requires a permit and compensation for loss of City Trees and Private Protected Trees due to construction activities. City Trees are characterized as trees partially or completely

growing in a City park, on City-owned property, or on a public right-of-way, including any street, road, sidewalk, park strip, mow strip, or alley.

The UC Davis main campus recognizes two categories of on-campus trees that meet standards for important trees, including heritage trees and specimen trees. These standards are used on the Sacramento Campus as well and are reflected in the 2020 LRDP Update SEIR. According to the 2020 LRDP Update SEIR, based on the tree sizes and species for heritage trees (i.e., healthy valley oak trees with trunk diameters of 33 inches or greater at a height of 24 inches from the ground), no trees observed on the Sacramento Campus meet the UC Davis criteria for protected trees, so none occur in proximity to the CUP site.

Up to 50 trees could be removed for construction of the project and approximately 10 trees would be planted as part of the project. Additional (excess) trees are being planted on the Sacramento Campus as part of other projects, including 86 new trees as part of the Sacramento Ambulatory Surgery Center project and 38 trees as part of the Parking Structure 4 project. Holistically there would be no net loss of trees on the campus, which supports the 2020 LRDP Update's Principal #2 to "Continue the strong landscape treatment of major roads and open space areas to provide shaded areas sidewalks for pedestrians with at least no net loss of trees and contribute to the City of Sacramento goal of 40% tree canopy coverage."

Constructing the SMUD feeders is not anticipated to result in any tree removal, as the work would take place within the existing right-of-way and would be primarily underground. However, depending on the final alignment within the study area, construction activities could occur within the dripline of protected trees, and therefore it is possible that construction activities could indirectly impact trees (i.e., root systems) protected under the City's tree ordinance. Mitigation Measures BIO-5 would reduce this impact.

As stated above, no heritage trees or specimen trees would be removed on the Sacramento Campus, and no trees protected by the City's tree ordinance are anticipated to be removed for the SMUD Component of the project. Mitigation Measure BIO-5 would reduce potential impacts to tree root systems for the SMUD Component and ensure any conflicts with local policies/ordinances intended to protect trees. This impact would be ***less than significant with mitigation***. Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure BIO-5: Tree protection

Prior to site disturbance, SMUD will provide a plan to the City regarding all tree work. Furthermore, a certified arborist shall approve all work plans prior to submittal to the City. For trees that will be preserved onsite during project construction, the following guidelines are recommended to ensure the long-term survival and stability of the trees:

- Educate Workers: Educate all workers onsite about tree protection guidelines and requirements prior to construction.
- Establish a Tree Protection Zone: Establish a tree protection zone (TPZ) around any tree or group of trees designated for retention. The TPZ should, at a minimum, be equal to 1.5 times the radius of the dripline. The TPZ may be adjusted on a case-by-case basis after consultation with a certified arborist.

- Install Fencing and Signage: Install fencing around the TPZ of all trees or groups of trees designated for retention. The fencing should remain in place for the duration of construction activities. Post appropriate signage to help convey the importance of the TPZ to workers.
- Prohibit Construction Activities within the TPZ: Prohibit construction-related activities, including grading, trenching, construction, demolition, or other work, within the TPZ. No heavy equipment or machinery should be operated within the TPZ. No construction materials, equipment, machinery, or other supplies should be stored within the TPZ. Vehicle and foot traffic should not be permitted within the TPZ. No wires or signs should be attached to any trees designated for retention.
- Selected Trees: Prune selected trees to provide the necessary clearance during construction and remove any defective limbs or other tree parts that may pose a failure risk. All pruning should be completed by a certified arborist or tree worker and adhere to the Tree Pruning Guidelines of the International Society of Arboriculture.
- Monitor Trees and TPZs: Monitor the integrity of the TPZs and the health of the trees designated for retention regularly throughout the construction process. A certified arborist should monitor the health and condition of the protected trees and, if necessary, recommend additional mitigations and appropriate actions. This could include the monitoring of trees adjacent to project facilities to determine if construction activities (including the removal of nearby trees) would affect protected trees in the future.
- Treat Affected Trees: Provide supplemental irrigation and other care, such as mulch and fertilizer, as deemed necessary by a certified arborist, to any trees affected by construction. The treatment of any injuries should be performed by a certified arborist.

3.4 Archaeological, Historical, and Tribal Cultural Resources

This section describes the regulatory and environmental setting for archaeological, historical, and tribal cultural resources in the area for the Central Utility Plant (CUP) Expansion Project; analyzes effects on such resources that would result from implementation of the CUP Expansion Project; and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

No comments specific to cultural resources were received during the notice of preparation (NOP) comment period.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the 2020 Long-Range Development Plan Update Supplemental Environmental Impact Report (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.4.1 Existing Conditions

Regulatory Setting

Section 3.4 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for archaeological, historical, and tribal cultural resources. The following discussion summarizes Section 3.4.1 of the 2020 LRDP Update SEIR and applicable updates since 2019.

University of California

As noted in Section 3.0.2, *University of California Autonomy*, the University of California (UC or University), as a constitutionally created State of California (State) entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the UC that are in furtherance of its educational purposes. However, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

Federal

National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA) established the National Register of Historic Places (NRHP), the official designation of historical resources. Districts, sites, buildings, structures, and objects are eligible for listing in the NRHP, which is administered by the National Park Service. Nominations are listed if they are significant in American history, architecture, archeology, engineering, and culture. A project is considered to have a significant impact when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

State

California Register of Historical Resources

All properties listed in or formally determined eligible for listing in the NRHP are eligible for the California Register of Historical Resources (CRHR). The CRHR is a listing of California resources that are significant within the context of California's history. The CRHR is a statewide program of similar scope to that of the NRHP, and with similar criteria for inclusion in the register. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

The CRHR uses four evaluation criteria for the listing eligibility of a resource.

1. Is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
2. Is associated with the lives of persons important to local, California, or national history.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of a master; or possesses high artistic values.
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Similar to the NRHP, a resource must meet one of the above criteria and retain integrity. The CRHR uses the same seven aspects of integrity as the NRHP (i.e., location, design, setting, materials, workmanship, feeling, and association).

Tribal Cultural Resources

Assembly Bill (AB) 52, signed by the governor in September 2014, added several sections to the Public Resources Code (PRC), establishing a new class of resources under CEQA and a new category in the CEQA Appendix G environmental checklist: "tribal cultural resources." AB 52 requires that lead agencies undertaking CEQA review must, upon written request of a California Native American tribe, begin consultation once the lead agency determines that the application for the project is complete, prior to the issuance of an NOP of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration.

PRC Section 21074 states the following.

a) "Tribal cultural resources" are either of the following:
    1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
        A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
        B) Included in a local register of historical resources, as defined in subdivision (k) of Section 5020.1.
    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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Declining consultation under AB 52 does not limit a tribe's option to consult on a project under other CEQA or federal cultural resources laws or limit protective measures to be taken under those other laws. Furthermore, tribes and individuals may still submit comments on the environmental document during the public circulation period, even if a tribe chose not to consult under AB 52.

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural and Sacred Sites Act applies to both State and private lands. The act requires, upon discovery of human remains, construction or excavation activity to cease and the county coroner be notified. If the remains are of a Native American, the coroner must notify the Native American Heritage Commission (NAHC). The NAHC then notifies those persons most likely to be descended from the Native American's remains. The act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods. The descendants may, with the permission of private landowners, inspect the site and recommend to the owner or the person responsible for the excavation means for treating or disposing of the remains and associated grave goods. The descendants must complete their inspection and make recommendations within 24 hours of their notification by the NAHC. The recommendation may include scientific removal and non-destructive analysis.

Public Resource Code, Section 5097.5

PRC Section 5097.5 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burials falls within the jurisdiction of the NAHC. Section 5097.5 of the PRC states the following, in pertinent part:

> (a) A person shall not knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands.
>
> (b) As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.
>
> (c) A violation of this section is a misdemeanor, punishable by a fine not exceeding ten thousand dollars ($10,000), or by imprisonment in a county jail not to exceed one year, or by both that fine and imprisonment.

Regional and Local

Sacramento Preservation Ordinance

The Sacramento Historic Preservation Ordinance is an enacted regulation enforced by the Community Development Department of the City of Sacramento (City) (City Municipal Code Chapter 17.604). The ordinance establishes a City preservation program, commission, and staff and provides

mechanisms to identify and protect historic and cultural resources. It provides standards, criteria, and processes consistent with State and federal preservation standards and criteria. It also establishes the Sacramento Register or Historic and Cultural Resources, which is on file with the City Clerk.

City of Sacramento General Plan

Relevant goals and policies pertaining to cultural and historic resources are listed in the Citywide Historic and Cultural Preservation Element of the City of Sacramento 2035 General Plan (City of Sacramento 2015) and Section 3.4 of the 2020 LRDP Update SEIR.

The 2040 General Plan is currently in the public review phase (City of Sacramento 2023). The Historic and Cultural Resources Element of the 2040 General Plan contains the following policies applicable to cultural and historic resources:

Policy HCR-1.1: Preservation of Historic and Cultural Resources Site Features and Landscaping. The City will continue to promote the preservation, restoration, enhancement, and recognition of historic and cultural resources throughout the city.

Policy HCR-1.14: Archaeological, Tribal, and Cultural Resources. The City shall continue to comply with federal and State regulations and best practices aimed at protecting and mitigating impacts to archaeological resources and the broader range of cultural resources as well as tribal cultural resources

Policy HCR-1.15: Treatment of Native American Human Remains. The City shall treat Native American human remains with sensitivity and dignity and ensure compliance with the associated provisions of California Health and Safety Code and the California Public Resources Code. The City shall collaborate with the most likely descendants identified by the Native American Heritage Commission.

Environmental Setting

Section 3.4 of the 2020 LRDP Update SEIR, which is incorporated by reference, contains the environmental setting for cultural and historic resources in the area surrounding the Sacramento Campus, including the original California State Fairgrounds. There have been no changes to the environmental setting since the 2020 LRDP Update.

Known Cultural Resources

Built-Environment Resources

Several built -environment resources on the Sacramento campus were identified in the 2020 LRDP Update SEIR. The Institute for Regenerative Cures, or Exhibition Hall (1928), is north of Broadway on Stockton Boulevard, approximately 0.2 mile southwest of the existing CUP. The Governor's Hall (1938) is approximately 0.23 mile southwest of the existing CUP, north of Broadway, and west of the Transitional Science Center. The Pathology Administration Building (1968) and Cypress Building (1954) are south of V Street on the northern border of the Sacramento Campus, approximately 0.5 mile northwest of the existing CUP. For the purpose of analysis of the impacts resulting from the CUP Expansion Project, it is assumed that all of these buildings are eligible for listing in the State and federal registers. None of the buildings would be affected by the proposed project.

Because portions of the two Sacramento Municipal Utility District (SMUD) feeder routes are outside the boundaries used in the 2020 LRDP Update SEIR search area, an additional site-specific records

search was conducted August 7, 2023 at the North Central Information Center. The records search identified four built-environment resources. Three historic-era buildings are located within 1/8 mile and include two residences and the SMUD Headquarters building on 6301 S Street.

One residence, located at 1909 55th Street, was evaluated and recommended not eligible for either the NRHP or the CRHR. The residence located at 6100 1st Street, built in 1949, as not been evaluated for its significance.

The SMUD Headquarters is listed on the NRHP for its local significance in architecture.

Both feeder routes intersect with the historic alignment of the Southern Pacific Railroad from 65th Street to SMUD's East City substation. While considered significant as a whole, the portions of the Southern Pacific Railroad within the project have not been evaluated for its significance.

Archaeological Resources

No known recorded archaeological resources are associated with the Sacramento Campus, including the project site, and the potential for Native American sites to be present, including Native American burial sites, is low. In 2004, human remains were found in what was determined to be part of a long-forgotten burial ground at the former Sacramento County Hospital, which was in use between 1891 and 1927. Excavation work was conducted on a portion of the burial ground, which is in the northern portion of the Sacramento Campus and not in the vicinity of the CUP. In 2021, Pacific Legacy conducted fieldwork, including a canine field study, to identify the extent and location of the graveyard (Pacific Legacy 2021). Two projects have taken place in the sensitive graveyard area since the 2020 LRDP Update: Parking Structure 5 and the California Hospital Tower, which is still being constructed. Archaeological monitoring took place when excavation greater than 5 feet deep took place in the sensitive graveyard area; no additional human remains have been found to date. No archaeological resources were identified in the two SMUD feeder routes alignments (North Central Information Center 2023).

Tribal Cultural Resources

The process for complying with AB 52 requires actions by both tribes and lead agencies. It is separate from the consultation procedures under other cultural resources laws. AB 52 instructs tribes to submit written requests to lead agencies to be formally notified of projects proposed in the geographic area within which the tribe is traditionally and culturally affiliated. Lead agencies that receive such requests must formally notify the concerned tribes within 14 days of determining that an application for a project is complete or making a decision to undertake a project. The notified tribes must respond in writing within 30 days and request to consult or decline consultation under AB 52. If consultation is requested, the lead agency must initiate the consultation process within 30 days of receiving the request and prior to the release of an environmental document (i.e., negative declaration, mitigated negative declaration, EIR). Consultation is concluded when either (1) the parties agree to mitigate or avoid a significant effect on a tribal cultural resource, if such an effect is identified, or (2) a party, acting in good faith and after reasonable effort, concludes that a mutual agreement cannot be reached (PRC Section 20180.3.2, subdivision [b]).

The assessment of impacts on tribal cultural resources is based on the results of the consultation conducted pursuant to the AB 52 process. UC Davis has not received a request for notification of projects in Sacramento County from any of the local tribes. On June 6, 2023, ICF asked for a search of the NAHC Sacred Lands File and a list of Native American contacts. NAHC responded on June 27,

2023, that results of the Sacred Lands File search were positive and included a list of Native American tribes that may have knowledge of cultural resources in the project area. UC Davis sent letters to the following contacts on July 24, 2023:

- Buena Vista Rancheria of Me-Wuk Indians
- Chicken Ranch Rancheria of Me-Wuk Indians
- Ione Band of Miwok Indians
- Nashville Enterprise Miwok-Maidu-Nishinam Tribe
- Shingle Springs Band of Miwok Indians
- Tsi Akim Maidu
- United Auburn Indian Community of the Auburn Rancheria
- Wilton Rancheria
- Colfax-Todds Valley Consolidated Tribe

On September 13, 2023, Anna Starkey of the United Auburn Indian Community of the Auburn Rancheria (UAIC) responded via email to inform that UAIC's Tribal Historic Information System did not indicate any tribal cultural resources in or adjacent to the project. Ms. Starkey included UAIC's standard unanticipated discoveries measure and other chapter recommendations. A record of correspondence is included in Appendix C. To date, no other responses have been received.

3.4.2 Environmental Impacts

This section describes the environmental impacts associated with archaeological, historical, and tribal cultural resources that would result from implementation of the CUP Expansion Project. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) any significant impacts are provided, if available.

Methods for Analysis

This analysis identifies the potential impacts of the CUP Expansion Project on archaeological, historical, and tribal cultural resources on the project site and in the vicinity. The impact analysis considers the environmental setting of known archaeological, historical, and tribal cultural resources in the project vicinity as well as the potential for impacts on previously undocumented resources, including human remains, and physical effects (e.g., disturbance, material alteration, demolition) on both known and previously undocumented cultural resources that could result from project construction. The analysis is also informed by the provisions and requirements of federal, State, and local laws and regulations that apply to cultural resources.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the CUP Expansion Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- A substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.

- A substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- Disturbance of any human remains, including those interred outside of formal cemeteries.
- Potential to cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe and
    - Listed in or eligible for listing in the CRHR or in a local register of historical resources, as defined in PRC Section 5020.1(k) or
    - 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Impacts and Mitigation Measures

Impact CUL-1: Potential to cause a substantial adverse change in the significance of a historical resource?

Summary of Impact CUL-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	S	MM NOI-3b	LTS
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that implementation of the 2020 LRDP Update could result in damage to or renovation of structures that are significant historical resources; damage could extend to their settings as well. If changes are proposed to a building or structure that is a historic property, those changes could diminish the historic integrity of the building. Even with implementation of Mitigation Measures LRDP -CUL-1a, LRDP-CUL-1b, and LRDP-CUL-1c, this impact was determined to be significant and unavoidable, largely due to planned renovation of the Governor's Hall. However, that project is not a part of the project assessed in this EIR.

CUP Expansion Project Impacts

The CUP Expansion Project includes make-ready projects, expansion of the existing CUP site, and the installation of two SMUD feeder routes between the SMUD East City Substation and the existing CUP. The CUP Expansion Project would require a land use amendment to the 2020 LRDP to convert 3.17 acres on the adjacent "Education, Research, and Housing" land use, which currently houses the Facility Support Services Building (FSSB), to "Support" space. All make-ready project work and the CUP expansion would take place within the 6.41 acres of proposed support space, which is currently

developed with the FSSB, the existing CUP, and other support infrastructure. These buildings are not historic. As stated above, the nearest historic buildings are 0.2 mile southwest of the project site; these would not be affected by demolition or construction.

As described above, the records search identified four built environment resources within 1/8 mile of the two SMUD feeder routes from the East City Substation are within Sacramento's Elmhurst neighborhood. These resources include two residences, the SMUD Headquarters building on 6301 S Street, and the historic alignment of the Southern Pacific Railroad (currently light rail) from 65th Street to SMUD's East City substation.

The SMUD transmission line would be installed underground along one of the potential routes identified in Figures 2-5a and 2-5b, both through the Elmhurst neighborhood. SMUD would coordinate with Sacramento Regional Transit District prior to ground disturbing activities to ensure no there are no construction impacts on the light rail.

Construction-related vibration activities would occur and depending on the type and intensity of certain activities, and the location of those activities, there could be the potential for structural damage due to vibration to homes or buildings along the route. These buildings could potentially be historic resources, although they have not been evaluated as such, as many of the structures in the area are over 50 years old. Mitigation Measure NOI-3b would reduce this impact to less-than-significant.

This impact would be **less than significant with project-specific mitigation.** Thus, with implementation of project-specific mitigation, the project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure NOI-3b: Equipment Buffer Distances to Nearby Vibration-Sensitive Structures

Refer to Mitigation Measure NOI-3b in Section 3.11.

Impact CUL-2: Potential to cause a substantial adverse change in the significance of an archaeological resource?

Summary of Impact CUL-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	S	LRDP-CUL-2a, LRDP CUL-2b	LTS
CUP Expansion	S	LRDP-CUL-2a, LRDP CUL-2b	LTS
SMUD Component	S	LRDP-CUL-2a, LRDP CUL-2b	LTS
Whole Project	S	LRDP-CUL-2a, LRDP CUL-2b	LTS

LTS = less than significant; S = significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded there are no known archaeological resources on the Sacramento Campus and that implementation of Mitigation Measures LRDP-CUL-2a and LRDP-CUL-2b would ensure that impacts on unknown archaeological resources would be avoided. This impact was determined to be less than significant with mitigation.

CUP Expansion Project Impacts

As stated above, the make-ready projects and CUP Expansion Project would take place on the site of the FSSB and the existing CUP. A small portion of a vegetated area adjacent to the campus major open space would be removed to construct a new Parking Structure 6 (PS 6) access route. Although there are no known archaeological resources on the Sacramento Campus, including the project site, there is potential for unknown buried archaeological resources to be present.

No archaeological resources have been identified in the vicinity of the two proposed SMUD feeder routes, which would be underground in existing roadway rights-of-way that are highly disturbed.

Implementation of Mitigation Measures LRDP-CUL-2a and LRDP-CUL-2b would ensure that previously undiscovered archaeological resources would not be damaged or destroyed during ground disturbance. This impact would be **less than significant with LRDP mitigation.** Thus, the project would not result in a new or more severe impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-CUL-2a: Conduct cultural resources sensitivity training

Prior to any ground disturbance, construction crews will be required to attend cultural resources sensitivity training. The training will focus on identifying potential archaeological resources as well as human remains. If potential archaeological resources or human remains are encountered, construction crews will be instructed to notify the University immediately.

Mitigation Measure LRDP-CUL-2b: Stop work in the event of discovery of an archaeological resource

If an archaeological resource is discovered during construction, all project-related ground disturbance within 100 feet of the find will cease. The University will contact a qualified archaeologist within 24 hours to inspect the site. If a resource is determined to qualify as a unique archaeological resource (as defined by CEQA) and the University determines, in compliance with PRC 21083.2, which requires preservation in place as a first option, that the resource cannot feasibly be avoided, the University will retain a qualified archaeologist to conduct excavations to recover the resource. Any archaeologically important artifacts recovered during monitoring will be cleaned, cataloged, and analyzed, with the results presented in an archaeological data recovery report.

Impact CUL-3: Disturbance of any human remains, including those interred outside of dedicated cemeteries?

Summary of Impact CUL-3 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	S	LRDP-CUL-3b	LTS
CUP Expansion	S	LRDP-CUL-3b	LTS
SMUD Component	S	LRDP-CUL-3b	LTS
Whole Project	S	LRDP-CUL-3b	LTS

LTS = less than significant; S = significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that there is high potential for encountering historic-era human remains in the northern portion of the Sacramento Campus and that Mitigation Measures LRDP-CUL-3a and LRDP-CUL-3b would ensure that impacts would be avoided. This impact was determined to be less than significant with mitigation.

CUP Expansion Project Impacts

The make-ready projects and the CUP Expansion Project would take place on the southern portion of the Sacramento Campus, at the site of the FSSB and the existing CUP. In addition, a small portion of a vegetated area adjacent to the campus major open space would be removed to construct a new PS 6 access route. These areas are not in the vicinity of the sensitive graveyard area on the northern portion of the campus, and it is unlikely that human remains would be found. However, in the event that human remains are found during construction, Mitigation Measure LRDP-CUL-3b would ensure that impacts on human remains would be less than significant for all project components. Therefore, this impact would be **less than significant with LRDP mitigation.** The project would not result in a new or more severe impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-CUL-3b: Stop work if human remains are encountered

In the event of a discovery on campus of human bone, suspected human bone, or a burial, all excavation within 100 feet of the find will halt immediately. The UC will contact a qualified archaeologist or the county coroner within 24 hours to determine whether the bone is human. Consistent with California Health and Safety Code Section 7050.5(b), which prohibits disturbance of human remains uncovered by excavation until the coroner has made a finding relative to PRC Section 5097.5 procedures, the UC will ensure that the remains, and a reasonable buffer around the remains established in coordination with the coroner or archaeologist, are protected against further disturbance. If it is determined that the find is of Native American origin, the UC will comply with the provisions of PRC Section 5097.98 regarding the identification and involvement of the Native American most likely descendant (MLD).

If human remains cannot be left in place, the University will ensure that the qualified archaeologist and the MLD are provided an opportunity to confer on archaeological treatment

of human remains and that appropriate studies, as identified through this consultation, are carried out prior to reinterment. The University will provide the results of all such studies to the local Native American community and provide the local Native American community with an opportunity to be involved in any interpretative reporting.

If the human remains are determined to be historic and cannot be avoided and preserved in place, the project site will be excavated under the supervision of an archaeologist, and all human remains and associated artifacts will be removed from the site and analyzed. After analysis, all recovered human remains and associated artifacts will be placed in caskets and buried in a single mass grave at a local cemetery.

Impact TCR-1: Potential to cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American tribe that is listed in 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)?

Summary of Impact TCR-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	NI	None	—
CUP Expansion	NI	None	—
SMUD Component	NI	None	—
Whole Project	NI	None	—

NI = no impact

Impacts Identified in the 2020 LRDP Update SEIR

At the time of the 2020 LRDP Update SEIR, UC Davis had not received any requests from tribes that are culturally or traditionally affiliated with the plan area in Sacramento County to be notified of opportunities to consult on new projects under AB 52. Because there were no requests under AB 52, no consultations occurred. No tribal cultural resources that are listed in or eligible for listing in the CRHR or a local register were identified under the AB 52 process. It was determined that there would be no impact.

CUP Expansion Project Impacts

Although no tribes have asked to consult on projects at the Sacramento Campus, UC Davis sent letters to the Native American contacts on the list provided by the NAHC. As described above, UAIC responded that their Tribal Historic Information System did not indicate tribal cultural resources to be located in or adjacent to the project. No other replies have been received. Should UC Davis receive requests for information on the CUP Expansion Project or requests for consultation, those efforts will be documented in the subsequent drafts. Because the University has not received requests from tribes that are culturally or traditionally affiliated with the project area to be notified of opportunities to consult under AB 52, there would be **no impact.** The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Impact LRDP-TCR-2: Potential to cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American tribe and

determined by the lead agency to be significant pursuant to the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1 ?

Summary of Impact TCR-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	NI	None	—
CUP Expansion	NI	None	—
SMUD Component	NI	None	—
Whole Project	NI	None	—

NI = no impact

Impacts Identified in the 2020 LRDP Update SEIR

At the time of the 2020 LRDP Update SEIR, UC Davis had not received any requests from tribes that are culturally or traditionally affiliated with the plan area in Sacramento County to be notified of opportunities to consult on new projects under AB 52. Because there were no requests under AB 52, no consultations occurred. No tribal cultural resources listed in or eligible for listing in the CRHR or a local register were identified under the AB 52 process. It was determined that there would be no impact.

CUP Expansion Project Impacts

As stated above, although no tribes have requested to consult on projects at the Sacramento Campus, UC Davis sent letters to the Native American contacts on the list provided by the NAHC. The only response from UAIC, stated that their Tribal Historic Information System did not indicate tribal cultural resources to be located in or adjacent to the project. No other replies have been received. Should UC Davis receive requests for information on the CUP Expansion Project or requests for consultation, those efforts will be documented in the subsequent drafts. Because the University has not received requests from tribes that are culturally or traditionally affiliated with the project area to be notified of opportunities to consult under AB 52, there would be **no impact.** The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

3.5 Energy

This section describes the regulatory and environmental setting for energy in the Central Utility Plant (CUP) Expansion Project area, analyzes effects on energy resources that would result from implementation of the CUP Expansion Project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

In response to the Notice of Preparation for this Environmental Impact Report (EIR), commenters expressed the following concerns related to energy:

- Sacramento Municipal Utility District (SMUD) expressed concerns about overhead/transmission and distribution line easements, utility line routing, electrical load needs/requirements, and if there is a need to relocate/remove any SMUD infrastructure that may be affected in or around the project area.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2020 Long Range Development Plan Update Supplemental EIR* (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150(c)). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.5.1 Existing Conditions

Regulatory Setting

Section 3.5 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for energy resources. The following discussion summarizes Section 3.1.1 of the 2020 LRDP Update SEIR and applicable updates since 2019.

University of California

As noted in Section 3.0.2, *University of California Autonomy*, the University of California (UC or University), Davis, as a constitutionally created State entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the UC that are in furtherance of its educational purposes. However, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

UCDMC Campus Standards & Master Specifications Design Requirements

The *UCDMC Campus Standards & Master Specifications Design Requirements* (University of California, Davis Health System 2014) apply to all new construction (including entire new buildings as well as remodels or additions to existing buildings) on the UC Davis Sacramento Campus. The guide describes a vision for creating a physical environment that supports the University's mission, vision, and values and addresses the principles of the physical design framework. The guide includes green building requirements, accessibility, sustainable materials, products and equipment landscape

design, design considerations for existing trees and planting selection, lawn areas, parking/circulation, sustainability and energy efficiency, and other guidelines.

UC Sustainable Practices Policy

The University of California has a system-wide policy regarding sustainability practices and performance goals and targets. The UC Sustainable Practices Policy has been updated since the 2020 LRDP Update and covers the following 10 areas of operational sustainability.

- Green building design
- Clean energy
- Climate protection
- Sustainable transportation
- Sustainable building operations for campuses
- Zero waste
- Sustainable procurement
- Sustainable food services
- Sustainable water systems
- Sustainability at UC Health

Section 3.7, *Greenhouse Gases*, describes the Sustainable Practices Policy in more detail.

Environmental Setting

This section discusses the environmental setting relevant to energy in the CUP Expansion Project area. Section 2.1.1, *Central Utility Plant*, discusses the existing CUP in detail, and Section 2.4, *Central Utility Plant Expansion Project*, describes the components of the CUP Expansion Project. The CUP Expansion Project components would be adjacent to and within the existing CUP as shown on Figures 2-3 and 2-4. The area is currently developed with parking and landscaping. The environmental setting of the project site is largely unchanged from the 2020 LRDP Update.

The new Annex would be north of Parking Structure 6 (PS6), which is being constructed to support the future Aggie Square development, and north of the existing Facility Support Services Building (FSSB) shops. The Annex is proposed to be located west of the 3-story FSSB office building and east of the existing CUP cooling towers and PS6 driveway (Figure 2-3).

To prepare for construction of the Annex buildings, the existing roadway that connects PS6 and parking lot 20 would be replaced with a new roadway on the west side of the FSSB building (Figure 2-4). The new infrastructure for a 116/21.9-kilovolt (kV) 40-megavolt-ampere (MVA) transformer, and installation of a 40-MVA transmission line underground between SMUD's East City Substation and the new electrical service yard at the CUP would be derived from SMUD's East City substation and would be delivered to campus via one of two potential routes being evaluated in this EIR (Figures 2-6a and 2-6b).

The new service yard would be within the boundaries of the existing CUP yard and would be walled off and accessible to the south along 49th Street. The CUP Annex would conflict with existing storm

drain and domestic water systems as well as other mechanical and irrigation piping. These utilities would be rerouted. Surface improvements include asphalt pavement, landscaping, curb and gutters, and concrete hardscape.

Energy Use and Global Warming

Scientists and climatologists have produced evidence that the burning of fossil fuels by vehicles, power plants, industrial facilities, residences, and commercial facilities has led to an increase in the Earth's temperature. For an analysis of greenhouse gas production and proposed CUP Expansion Project impacts on climate change, please see Section 3.7, *Greenhouse Gas Emissions*.

3.5.2 Environmental Impacts

This section describes the environmental impacts associated with energy that would result from implementation of the CUP Expansion Project. It describes the methods used to determine the effects of the CUP Expansion Project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts are provided, if applicable.

Methods for Analysis

Refer to Section 3.5, *Energy*, in the 2020 LRDP Update SEIR for a discussion of the methodology used in the impacts analysis section below.

Construction

Regarding energy use (e.g., fuel use) during construction, it is assumed that only diesel fuel would be used in fossil-fuel-powered construction equipment and a mix of diesel and gasoline fuel in on-road vehicles for hauling materials and worker commute trips. The same assumptions of construction equipment numbers, horsepower ratings, and load factors used to estimate construction carbon dioxide (CO_2) emissions (see Section 3.7, *Greenhouse Gas Emissions*) were used to calculate construction-related fuel use. Estimated CO_2 emissions were used to characterize gallons of fuel consumed based on the carbon content of the fuel (Climate Registry 2022). Construction would consume approximately 282,000 kilowatt-hours (kWh) of electricity between 2025 and 2029. Electricity usage during construction of the project was obtained from UC Davis staff.

Operations

Electricity consumption estimates (megawatt-hours per year) for existing and future campus operations were obtained using the data and sources described in Section 3.7, *Greenhouse Gas Emissions.*

The CUP uses natural gas provided by Pacific Gas and Electric Company to power four steam boilers and one gas turbine. The four steam boilers also consume minor amounts of diesel fuel oil. Natural gas and diesel fuel oil estimates (therms per year, gallons per year) for existing and future campus operations were obtained using the data and sources described in Section 3.7, *Greenhouse Gas Emissions.*[1]

[1] The CUP has five 2,500-kilovolt-ampere emergency generators. They would be moved to the CUP Annex, but fuel consumption and emissions would not change with implementation of the project.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the 2020 LRDP Update would be considered to have a significant effect if it would result in any of the conditions listed below.

- Wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operations.
- Conflict with or obstruction of a state or local plan for renewable energy or energy efficiency.

Impacts and Mitigation Measures

Impact EN-1: Wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation

Summary of Impact EN-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	LTS	None	-
Whole project	LTS	None	-

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that implementation of the 2020 LRDP Update would not result in wasteful, inefficient, and unnecessary consumption of energy, and this impact was determined to be less than significant.

CUP Expansion Project Impacts

CEQA requires mitigation measures to reduce "wasteful, inefficient and unnecessary" energy usage (Public Resources Code Section 21100, subdivision (b)(3)). Neither the law nor CEQA Guidelines Section 15126.2 et seq. establish criteria that define wasteful, inefficient, or unnecessary use. Compliance with California Code of Regulations Title 24 Energy Efficiency Standards would result in energy-efficient buildings and, as described below, UC Davis is committed to achievement of higher standards. However, compliance with building codes does not adequately address all potential energy impacts during construction and operation. For example, energy would be required to transport people and goods to and from the project site. Energy use is discussed by anticipated use type below.

Construction-Related Energy

Energy would be required to implement the project, including operation and maintenance of construction equipment and transport of construction materials. The energy expenditure required to construct the Annex building and related infrastructure associated with the project would be nonrecoverable. Most energy consumption would result from the operation of off-road construction equipment and on-road vehicle trips associated with commutes by construction workers and haul-truck trips. Total project construction-generated CO_2 exhaust emissions are estimated at 4,876

metric tons (assumes conversion of CO_2 to gallons assuming 10.21 kilograms of CO_2 per gallon) (Climate Registry 2022). Assuming all emissions are generated by diesel vehicles, approximately 473,508 gallons of diesel would be consumed during construction of the project between 2025 and 2029. In addition to liquid fuel, construction would consume approximately 282,000 kWh of electricity between 2025 and 2029.

Construction of the SMUD Component would result in energy consumption from operation of off-road construction equipment and on-road vehicle trips associated with commutes by construction workers and haul-truck trips. As discussed in Section 3.2, *Air Quality*, project-specific construction details for the SMUD Component are not currently available. Energy estimates for the Cordova Park Project, which includes construction of a similar transmission line, are used as reasonable proxies for the SMUD Component. The EIR for the Cordova Park Project (Appendix B, *Initial Study*) indicates that construction activities would consume approximately 1,327,337 gallons of gasoline and 95,113 gallons of diesel. Construction of the SMUD Component could occur for 2 years anytime between 2025 and 2029. This one-time energy expenditure required to construct the SMUD Component would be nonrecoverable. The energy needs for project construction would be temporary and would not require additional capacity or increase peak or base-period demands for electricity or other forms of energy.

As stated in the 2020 LRDP Update SEIR, there are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy efficient than the equipment used at comparable construction sites in other parts of the state. Idling of onsite equipment during construction would be limited to no more than 5 minutes in accordance with California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485. Furthermore, onsite construction equipment may include alternatively fueled vehicles (such as natural gas) where feasible. Finally, the selected construction contractors would use the best available engineering techniques, construction and design practices, and equipment operating procedures, thereby ensuring that the wasteful consumption of fuels and use of energy would not occur. Therefore, this impact remains **less than significant**.

Operational Building Energy and Stationary Sources

Refer to Section 3.5.2, *Energy*, Impact LRDP-EN-1, in the 2020 LRDP Update SEIR for a discussion of operational building energy and stationary sources impact analysis. Also refer to Table 3.5-1 in Section 3.5.2 in the 2020 LRDP Update SEIR, which summarizes the levels of energy consumption by utility under existing conditions and implementation conditions of the 2020 LRDP Update. Impacts from the CUP Expansion Project were not covered in the 2020 LRDP Update SEIR; however, the improvements would not be considered wasteful/inefficient.

CUP Expansion Project operational total fuel consumption in 2030 build year is estimated to be as follows.

- Natural gas: 3,600,000 therms
- Biomethane: 2,400,000 therms
- Diesel: 450 gallons
- Electricity: 16,500,000 kWh

UC Davis Health plans to eliminate dependence on the gas and steam turbines for primary energy production and would transition to electrical power from SMUD. The existing normal power service

requires expansion. This project component would include construction of new infrastructure for a 116/21.9-kV 40-MVA transformer and installation of a 40-MVA transmission line underground between SMUD's East City Substation and the new electrical service yard at the CUP. This installation also requires a new 21-kV 1,200-amp switchgear, new parallel conductors, new manholes, and a new circuit breaker at the CUP.

UC Davis Health is committed to achieving a baseline of U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) Gold certification, and will strive toward achieving LEED Platinum certification where possible starting in 2024. The baseline design for all buildings on the Sacramento Campus will exceed State of California energy efficiency standards by at least 20 percent. Additionally, per UC Davis's goals, buildings would be designed, constructed, and commissioned to outperform California Building Code energy-efficiency standards by at least 20 percent. Building designs/plans would also integrate the goals of obtaining 100 percent clean electricity. UC Davis Health is also committed to utilizing electricity from the SMUD Greenergy Program. The CUP Expansion Project will help UC Davis Health reach these goals. The CUP Annex will have the ability to expand in the future to incorporate future technologies as they are developed to provide longevity and resiliency, and new opportunities for sustainability on the Sacramento Campus. The project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. The impact would remain **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact EN-2: Conflict with or obstruction of a state or local plan for renewable energy or energy efficiency

Summary of Impact EN-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	LTS	None	-
Whole project	LTS	None	-

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that the 2020 LRDP Update would exceed Title 24 Building Energy Efficiency Standards by attainment of LEED Silver standards at a minimum (striving for Gold) and continued implementation of the UC Sustainable Practices Policy and other efficiency programs and initiatives; therefore, the impact was determined to be less than significant.

CUP Expansion Project Impacts

Refer to Section 3.5.2, *Energy*, Impact LRDP-EN-2, in the 2020 LRDP Update SEIR for a discussion of energy efficiency consistent with applicable plans, policies, and regulations adopted for the purpose of avoiding or mitigating environmental effects related to energy. The CUP Expansion Project will help UC Davis Health meet its energy efficiency goals by building a new CUP Annex that would be

constructed to maintain the existing CUP's reliability for uninterrupted service to the Sacramento Campus and main hospital and allow for expansion in the future to incorporate new technologies as they are developed to provide longevity and resiliency and new opportunities for sustainability on the Sacramento Campus. As stated under Impact EN-1, since the 2020 LRDP Update SEIR, UC Davis Health has committed to achieving a baseline of LEED Gold certification, and will strive toward achieving LEED Platinum certification where possible starting in 2024. The baseline design for all buildings on the Sacramento Campus will exceed State of California energy efficiency standards by at least 20 percent. Section 3.5, *Greenhouse Gases*, further describes energy-efficient measures that will be applied to the CUP Expansion Project. Therefore, the impact would remain **less than significant.**

Mitigation Measures

No mitigation measures are necessary.

3.6 Geology, Soils, and Seismicity

This section describes the regulatory and environmental setting for geology, soils, and seismicity in the project area; analyzes effects on geology, soils, and seismicity that would result from implementation of the Central Utility Plant (CUP) Expansion Project; and provides mitigation measures, if applicable, to reduce the effects of any potentially significant impacts. No comments related to geology, soils, and seismicity were received in response to the Notice of Preparation.

3.6.1 Existing Conditions

Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for this project are provided in Section 3.6.1, *Regulatory Setting*, of the *2020 Long Range Development Plan Update Supplemental Environmental Impact Report* (2020 LRDP Update SEIR) and are incorporated by reference. No changes to federal or State regulations have occurred since the 2020 LRDP Update.

University of California

As noted in Section 3.0.2, *University of California Autonomy*, the University of California (UC or University), as a constitutionally created State entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the UC that are in furtherance of its educational purposes. However, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

Local

The City of Sacramento 2040 General Plan is in the public review phase, and applicable draft policies from the Environmental Resources and Constraints Element include the following.

Policy ERC-7.1: Expansive Soils and Liquefaction. In areas of expansive soils and high liquefaction risk, the City shall continue to require that project proponents submit geotechnical investigation reports and demonstrate that the project conforms to all recommended mitigation measures prior to City approval.

Policy ERC-7.2: Seismic Stability. In accordance with the California Building Code, the City shall regulate structures intended for human occupancy to ensure they are designed and constructed to retain their structural integrity when subjected to seismic activity.

Environmental Setting

The environmental setting section from the 2020 LRDP Update SEIR (Section 3.6.1, *Environmental Setting*), is still applicable to the CUP Expansion Project and is incorporated by reference. There have been no changes to the regional or site geology/topography, soils, or seismicity since the 2020 LRDP Update.

3.6.2 Environmental Impacts

This section describes the environmental impacts associated with geology, soils, and seismicity that would result from implementation of the CUP Expansion Project. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts are provided, if applicable.

Methods for Analysis

To evaluate project impacts, resource conditions that could pose a risk to the project were identified through review of documents pertaining to these topics within the project area. Sources consulted include U.S. Geological Survey and California Geological Survey technical maps and guides, the Natural Resources Conservation Service Soil Survey (available through the Soil Survey Geographic Database), previous environmental impact reports; background reports prepared for nearby plans and projects, and published geologic literature. The information obtained from these sources was reviewed and summarized to establish existing conditions as described in the 2020 LRDP Update SEIR and identify potential environmental hazards. In determining level of significance, the analysis assumes that the CUP Expansion Project would comply with relevant laws, regulations, and guidelines.

Thresholds of Significance

Refer to Section 3.6, *Geology, Soils, and Seismicity*, in the 2020 LRDP Update SEIR for a discussion of applicable significance criteria.

Issues Not Evaluated Further

The 2020 LRDP Update SEIR concluded that further analysis of the following issues was not required; therefore, these issues are not discussed further.

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - 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 California Geological Survey Special Publication 42 [California Geological Survey 2018]);
    - Strong seismic ground shaking; or
    - Landslides.
- 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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.
- 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.
- Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

Impacts and Mitigation Measures

Impact GEO-1: Potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction

Summary of Impact GEO-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	S	LRDP-GEO-1	LTS
CUP Expansion	S	LRDP-GEO-1	LTS
SMUD Component	LTS	None	-
Whole project	S	LRDP-GEO-1	LTS

LTS = less than significant; S = significant; SMUD = Sacramento Municipal Utility District

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that the Sacramento Campus is in an area potentially subject to liquefaction, which could involve structural damage and associated risk; therefore, Mitigation Measure LRDP-GEO-1 (Conduct Geotechnical Investigations) was included to reduce the impact to a less-than-significant level by requiring site-specific design-level geotechnical investigations for each new building under the 2020 LRDP Update.

CUP Expansion Project Impacts

Portions of Sacramento are underlain by materials potentially subject to liquefaction. Geotechnical investigations conducted on the Sacramento Campus in conjunction with other recent building projects identified no substantial liquefaction risk for those sites, but liquefaction hazard had not been comprehensively evaluated campus-wide, and no site-specific information was available for the project site. In addition, the water table in the project area is known to be 18 to 32 feet below ground surface. Therefore, there is the potential for liquefaction at the site, and structural damage and the associated life and safety hazard could rise to the level of a significant impact. The 2020 LRDP Update SEIR includes Mitigation Measure LRDP-GEO-1, which requires a site-specific, design-level geotechnical investigation during the design phase of each building project under the 2020 LRDP Update.

The potential for liquefaction exists at the Sacramento Campus for future development, including development of the CUP Expansion Project; therefore, existing Mitigation Measure LRDP-GEO-1 would be applicable to the project. With implementation of Mitigation Measure LRDP-GEO-1, which would require the recommended geotechnical investigations, impacts related to liquefaction would be reduced to less-than-significant levels. This impact would remain **less than significant with mitigation**. Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-GEO-1: Conduct Geotechnical Investigation

A site-specific, design-level geotechnical investigation will be conducted during the design phase of each building project under the 2020 LRDP Update. This investigation will be conducted by a licensed geotechnical engineer and include a seismic evaluation of ground acceleration under the design event as well as relevant soil conditions at the site. Geotechnical recommendations will subsequently be incorporated into the foundation and building design for the building project.

Impact GEO-2: Potential to result in substantial soil erosion or the loss of topsoil

Summary of Impact GEO-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	S	LRDP-GEO-1	LTS
CUP Expansion	S	LRDP-GEO-1	LTS
SMUD Component	LTS	None	-
Whole project	S	LRDP-GEO-1	LTS

LTS = less than significant; S = significant; SMUD = Sacramento Municipal Utility District

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that construction of individual projects would involve clearing and grading at project sites and trenching in areas where utility infrastructure would be laid. Campus projects are required to comply with National Pollutant Discharge Elimination System permits and would be subject to a Stormwater Pollution Prevention Plan; therefore, the impact was determined to be less than significant.

CUP Expansion Project Impacts

As discussed in the 2020 LRDP Update SEIR, the Sacramento Campus is extensively developed and has a long history of urban development and use. The topsoil on the project site has already either been removed or extensively altered in conjunction with previous development. Therefore, the CUP Expansion Project would not result in a significant loss of topsoil, and this impact would be less than significant.

The CUP Expansion Project would be subject to a Stormwater Pollution Prevention Plan, National Pollutant Discharge Elimination System permit compliance, geotechnical investigation, and adherence to any resulting geotechnical investigation recommendations. Mitigation Measure LRDP-GEO-1 would reduce impacts related to soil erosion; therefore, the impact would remain **less than significant with mitigation**. As such, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

See Impact WQ-1 and Impact WQ-3 in Section 3.9, *Hydrology and Water Quality*, for more information about the effects of project-related soil erosion on water quality.

Mitigation Measures

Mitigation Measure LRDP-GEO-1: Conduct Geotechnical Investigation

See above under Impact GEO-1 for full text.

Impact GEO-3: Placement of project-related facilities on expansive soil, creating substantial direct or indirect risks to life or property

Summary of Impact GEO-3 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	LTS	None	-
Whole project	LTS	None	-

LTS = less than significant; SMUD = Sacramento Municipal Utility District

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that soils underlying the Sacramento Campus, including the project site, are characterized as being moderately expansive; there would be some potential for damage to improperly designed or constructed structures or facilities. However, with adherence to the California Building Code as required by the University of California for all new construction, risks associated with expansive soils would be addressed consistent with the current engineering standard of care, and the impact was determined to be less than significant.

CUP Expansion Project Impacts

The 2020 LRDP Update SEIR identified that soils underlying the campus are characterized as moderately expansive and that there would be some potential for damage to improperly designed or constructed structures and facilities. However, with adherence to the California Building Code as required by the University of California for all new construction, project risks associated with expansive soils would be addressed consistent with the current engineering standard of care, and the impact would be **less than significant**. Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures are necessary.

3.7 Greenhouse Gas Emissions

This section describes the regulatory and environmental setting for greenhouse gas (GHG) emissions in the Central Utility Plant (CUP) Expansion Project area, analyzes effects of GHG emissions that would result from implementation of the CUP Expansion project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

In response to the Notice of Preparation for this Environmental Impact Report (EIR), commenters expressed the following concerns related to GHG emissions:

- Coordination with the Sacramento Municipal Utility District (SMUD) to optimize the route alignment for emission reduction and electric vehicle charging options.
- Consideration of carbon-neutral heating options for the new gas-fired condensed boilers.

The University of California (UC or University, Davis is currently in coordination with SMUD regarding the potential routes, and coordination will continue during the permitting phase. The CUP Expansion Project is part of UC Davis's efforts to convert to carbon neutrality, which are discussed further throughout this analysis.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2020 Long Range Development Plan Update Supplemental EIR* (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150(c)). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.7.1 Existing Conditions

Regulatory Setting

Section 3.7 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for GHG. The following discussion summarizes Section 3.7.1 of the 2020 LRDP Update SEIR and applicable updates since 2019.

University of California

As noted in Section 3.0.2, *University of California Autonomy*, the University, as a constitutionally created State entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the UC that are in furtherance of its educational purposes. However, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

UC Davis adopted a climate action plan (CAP) in 2010 that focused on GHG emission reductions and targets through 2020. The Board of Regents of the University has also adopted the University of California Policy on Sustainable Practices (Sustainable Practices Policy) and University Carbon Neutrality Initiative (CNI) (now superseded), as described in Section 3.7, *Greenhouse Gases*, of the

2020 LRDP Update SEIR. There have been two updates to the Sustainable Practices Policy and CNI since the SEIR for the 2020 LRDP Update was finalized.

- February 2022—revisions included additional provisions related to sustainable transportation, which are not applicable to the project. The 2022 Sustainable Practices Policy also clarified the University's commitment to high-quality GHG offset credits and outlines requirements for its voluntary offset procurement strategy.
- July 2023—updates the University's GHG reduction goals to focus on decarbonizing campus operations. Sets new climate action goals that supersede the prior carbon-neutrality goals set as part of the CNI. The following summarized revisions to the policy are relevant to the project GHG analysis.

Green Building Design

- Leadership in Energy and Environmental Design (LEED). All new buildings submitting Preliminary Drawings after January 1, 2024, will at a minimum achieve a LEED "Gold" rating. Additionally, whenever possible within the constraints of program needs and standard budget parameters, these buildings will strive to achieve certification at a LEED "Platinum" rating.

  All new parking structures submitting Preliminary Drawings after January 1, 2024, will at a minimum achieve Parksmart "Silver" certification and strive to achieve "Gold" whenever possible within the constraints of program needs and standard budget parameters.

  All new building projects will achieve at least five points within the available credits in LEED Building Design and Construction Water Efficiency and Sustainable Sites: Rainwater Management categories and prioritize earning waste reduction and recycling credits.

Clean Energy

- Transition to Biomethane. By 2025, at least 20 percent of the natural gas historically combusted on each campus and health location will be biomethane. These biomethane volumes will double by 2030 and then decrease over time as UC's supply contracts expire by 2040.

Climate Action

- Total Emissions. Campuses will achieve at least a 90-percent reduction in total emissions (Scopes 1, 2, and 3) by no later than calendar year 2045 relative to a 2019 baseline year. After 2045, any residual emissions beyond the 90-percent reduction target will be negated by carbon removal.
- Scope 1 Emissions.[1] Informed by the decarbonization studies currently under development, before 2025, each UC location will set and submit to the UC Office of the President Scope 1 GHG reduction targets for calendar years 2030, 2035, and 2040. All percent-reduction targets will be set relative to a 2019 baseline year.

  In lieu of purchasing voluntary offsets and to further accelerate onsite actions, beginning in 2025 through 2030, each campus and the UC Office of the President will allocate funds equal to $25 per metric tons of carbon dioxide equivalent (CO_2e) for all remaining Scope 1 and 2 emissions. These funds will be used to achieve direct emissions reductions or to support climate

[1] Emission scopes are defined below in Table 3.7-1.

justice or community benefit programs. The price per ton will increase by 5 percent each year beginning in 2026.

- Scope 2 Emissions.[1] Campuses and the UC Office of the President will purchase 100 percent clean electricity beginning in 2025.
- Scope 3 Emissions.[1] Locations will set Scope 3 emission reduction targets with respect to a 2019 baseline year that align with the State of California's goals and policies to achieve carbon neutrality by 2045 or sooner. The targets must include emission sources from business travel, commuting, and disposal and treatment of solid waste.
- Climate Action Plans. Each UC location will prepare a CAP or its equivalent to establish and achieve the above GHG reduction goals. The CAPs or equivalent will be adopted prior to 2026.
- Carbon Offsets. The University will prioritize direct reductions of its covered Scope 1, 2, and 3 emissions. Counting carbon offsets toward a location's GHG reduction targets will be limited to California carbon offsets purchased to meet regulatory requirements of the California Air Resources Board (CARB) and voluntary offsets purchased to meet obligations under CEQA.

The campus categorizes its emissions into "scopes." UC Davis Sacramento emissions by scope type are defined in Table 3.7-1.

Table 3.7-1. Sacramento Campus Greenhouse Gas Emissions Sources by Scope[a]

Scope	Types of GHG Emissions
Scope 1	• Stationary combustion—Onsite boilers, turbines, generators, and other fossil-fuel-powered equipment • Mobile combustion—Fleet Services vehicles, campus shuttles, and off-road agricultural and grounds maintenance equipment • Fugitive emissions—Refrigerant usage in chillers, HVAC systems, and vehicles; research gases; and distribution losses in natural gas lines and meters
Scope 2	• Purchased electricity—Electricity purchased from SMUD for campus and leased spaces • Purchased gas—Natural gas purchased from PG&E for campus and leased spaces
Scope 3	• Commuting—Passenger vehicle trips, truck trips, air travel, and non-campus owned transit trips • Business air travel—UC Davis sponsored air travel by faculty and staff • Solid waste generation—Decomposition of campus-generated waste in local and regional landfills not owned by UC Davis • Water and wastewater use[b]—Treatment, distribution, and conveyance of campus water and wastewater using infrastructure not owned by UC Davis
Non-Scope	• Sources associated activity on a UC campus, but outside the operational control of the UC system (e.g., emergency helicopter operations, construction activities)

[a] The Sacramento Campus submits annual GHG inventories for verification by the Climate Registry. These inventories exclude Scope 3 and non-scope emissions.

[b] Indirect water-related emissions are not covered by the Scope 3 climate action goal, which requires emissions from commuting, business air travel, and solid waste achieve carbon neutrality by 2045 or sooner.

HVAC = heating, ventilation, and air conditioning; PG&E = Pacific Gas and Electric Company

As described in Section 3.7, *Greenhouse Gases*, of the 2020 LRDP Update SEIR, the Plant Operations and Maintenance department's Clean Energy Measures include implementing a large retrocommissioning effort on the Sacramento Campus buildings to reduce their energy consumption

through more efficient operations. The Plant Operations and Maintenance department also tracks energy consumption using real-time software and is continuing to identify and implement energy and water reduction strategies on the Sacramento Campus.

Federal and State

There is currently no federal law or legislatively mandated national GHG reduction target. However, several federal executive orders (EO) have recently been signed by President Joseph R. Biden related to GHG emissions and climate resiliency. EO 13990, signed in January 2021, set a national goal to achieve a 50- to 52-percent reduction from 2005 levels in economy-wide net GHG pollution in 2030. EO 14057, signed in December 2021, requires federal agencies to develop strategic processes for achieving, among other things, carbon-free electricity by 2030 and 100 percent zero-emission vehicle acquisitions by 2035. President Biden has also signed two bills—Infrastructure Investment and Jobs Act (2021) and Inflation Reduction Act (2022)—that provide funding for infrastructure improvements that will reduce GHG emissions and bolster resilience to climate change.

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Many of these regulations are described in Section 3.7, *Greenhouse Gases*, of the 2020 LRDP Update SEIR and establish a broad framework for the State's long-term GHG reduction and climate change adaptation program. Since publication of the 2020 LRDP Update SEIR, the following additional regulations and policies have been adopted and are relevant to the analysis of project GHG emissions.

- Assembly Bill (AB) 1279 requires California to achieve net-zero GHG emissions (i.e., reach a balance between the GHGs emitted and removed from the atmosphere) no later than 2045 and to achieve and maintain net negative GHG emissions from then on. It also mandates an 85-percent reduction in statewide anthropogenic GHG emissions (from 1990 levels) by 2045. AB 1279 requires State agencies to aim to achieve net-zero GHG emissions resulting from their operations no later than 2035, or as soon as feasible thereafter.
- CARB's *2022 Scoping Plan Update* identifies a technologically feasible, cost-effective, and equity-focused path to achieve carbon neutrality by 2045, pursuant to AB 1279. The plan also assesses the State's progress toward meeting the GHG emissions reduction goal called for in Senate Bill (SB) 32.
- SB 1020 adds interim goals to the State's Renewables Portfolio Standard (RPS)—90 percent renewables by 2035 and 95 percent renewables by 2040. SB 1020 also requires State agencies to rely on 100 percent renewable energy and zero-carbon resources to serve their own facilities by 2035.
- The Advanced Clean Cars II requires an increasing proportion of new vehicles to be zero-emission vehicles, with the goal of 100 percent zero-emission vehicles for new vehicles sold by 2035.

Regional and Local

Sacramento Metropolitan Air Quality Management District

The Sacramento Metropolitan Air Quality Management District (SMAQMD) is responsible for air quality planning in Sacramento County. As described in Section 3.7, *Greenhouse Gas Emissions*, of the

2020 LRDP Update SEIR, SMAQMD adopted a construction emissions threshold of 1,100 metric tons of CO_2e and guidance for evaluating operational GHG emissions from land use development projects. There have been no changes to this information.

City of Sacramento General Plan

As a constitutionally created State entity, the UC is exempt from compliance with local land use regulations, including general plans and zoning, when using land under its control in furtherance of its educational mission. As background information, goals and policies from the *Sacramento 2035 General Plan* include policies related to reducing GHG emissions in new development, zero-emission vehicle use, and coordination with other local agencies.

The 2040 General Plan is currently in the public review phase. The 2040 General Plan has policies throughout different elements to reduce GHG emissions in building and construction, planning, retrofits, planting and shading, and renewable energy (City of Sacramento 2023).

Environmental Setting

Rising atmospheric concentrations of GHGs in excess of natural levels result in increasing global surface temperatures—a process commonly referred to as *global warming*. Higher global surface temperatures, in turn, result in changes to Earth's climate system. The principal anthropogenic (i.e., human-made) GHGs contributing to global warming are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. There have been no material changes to the description of climate change or GHGs presented in Section 3.7, *Greenhouse Gas Emissions*, of the 2020 LRDP Update SEIR. Table 3.7-2 presents the most recent global, national, and statewide GHG inventories.

Table 3.7-2. Global, National, State, and Local GHG Emissions Inventories

Emissions Inventory	CO_2e (metric tons)
2010 Global	52,000,000,000
2021 United States	6,340,200,000
2020 California	369,200,000

Sources: Intergovernmental Panel on Climate Change 2014; U.S. Environmental Protection Agency 2023; California Air Resources Board 2023.

3.7.2 Environmental Impacts

This section describes the environmental impacts associated with GHG emissions that would result from the implementation of this project. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) any significant impacts are provided, if available.

Methods for Analysis

GHG emissions resulting from the construction and operation of this project were assessed and quantified (where possible) using standard and accepted software tools, techniques, and emission factors as described in detail below. A full list of assumptions and model outputs can be found in Appendix C.

Construction Emissions

Construction GHG emissions would originate from off-road equipment exhaust, vehicle exhaust (on-road vehicles), and electricity consumption. Emissions from these sources were quantified using the California Emissions Estimator Model (CalEEMod) Version 2022.1.1.14 and the methods described in Section 3.2, *Air Quality*. Changes in GHG emissions from tree planting and removals were modeled using the i-Tree Planting Calculator. As noted in Section 3.2, the quantitative emissions analysis covers all project elements except the new 40-megavolt-ampere transmission line. Necessary technical details required to quantify emissions from the new transmission line, including a detailed construction schedule and inventory of equipment, are not currently available. Accordingly, installation of the new transmission line is assessed qualitatively using emissions data from the Cordova Park Underground Cable Replacement Project as a representative project generally similar to the project's new 40-megavolt-ampere transmission line (SMUD 2022:3-5).

Operational Emissions

As discussed in Chapter 2, *Project Description*, the 2020 LRDP Update SEIR evaluated emissions generated by the CUP to support future campus growth. The California Hospital Tower Project (CA Tower) EIR (UC Davis 2021) evaluated CUP emissions with full implementation of the CA Tower and other projected growth on the UC Davis Sacramento Campus through 2030. The operational emissions analysis for the project quantifies and evaluates GHG emissions generated by existing CUP sources that will be modified with implementation of the project, as well as new emission sources that would be installed by the project. Specifically:

- **Sources Modified:**[2] Emissions generated by the existing turbine and four steam boilers at the CUP would be modified by the project. Specifically, the turbine would operate at minimum load following construction of the CUP Annex and, as such, natural gas consumption by the turbine would decrease. Boiler natural gas consumption at the CUP would likewise decrease relative to existing conditions due to additional campus electrification. Conversely, electricity consumption at the CUP would increase.
- **New Sources***:* Four new 10-million-British-thermal-unit gas-fired condensing boilers would be installed in the CUP Annex. The CUP Annex would also represent a new area source of emissions and consume electricity. A 100-foot natural gas line and one new gas meter would be installed.

Table 3.7-5 in Section 3.7, *Greenhouse Gas Emissions*, of the 2020 LRDP Update SEIR identifies additional operational emission sources at the CUP (i.e., generators,[3] chillers) and on the UC Davis Sacramento Campus (i.e., mobile, energy, water, waste). The project would not change operating conditions for any of these existing sources relative to what was analyzed in the 2020 LRDP Update SEIR or CA Tower EIR and, as such, they are excluded from the GHG analysis for the proposed project.

[2] The project also includes demolition of 4,600 square feet of the Facility Support Services Building (FSSB). However, this portion of the FSSB does not operate any stationary sources and its removal would not change associated mobile sources or building energy consumption. It is also assumed that demolition of the 4,600-square-foot wing would not change overall landscaping activity associated with the FSSB.

[3] As discussed in Chapter 2, *Project Description*, the project would relocate three emergency generators analyzed in the CA Tower EIR from the CUP to the CUP Annex. However, the number of generators and associated fuel consumption and emissions would not change with implementation of the project.

Based on the project construction schedule, it was assumed that the first operational year at full buildout would be 2030; therefore, project operational emissions are assessed under 2030 conditions. The net change in emissions quantified for the project between existing (2019) and 2030 operating conditions represents the GHG impacts analyzed in this section. Quantification methods for the sources and scenarios are further described below.

Existing (2019) Conditions

Existing GHG emissions from the steam boilers, gas turbine, and electricity consumption at the CUP were obtained from the 2020 LRDP Update SEIR. The existing conditions analysis for the CUP in the 2020 LRDP Update SEIR also included emissions from operation of eight hot water boilers. However, these boilers were installed in various locations at the main hospital and not at the CUP. The boilers have also since been decommissioned. Therefore, existing emissions for the CUP reported in the 2020 LRDP Update SEIR have been adjusted to remove emissions generated by the eight hot water boilers.

Project Analysis (2030 Conditions)

The gas turbine and four steam boilers at the CUP would be maintained and continue to operate with implementation of the project, but at a reduced capacity due to improvements made by the project. GHG emissions generated by these sources were quantified based on future expected fuel consumption provided by UC Davis (Ramirez pers. comm.). Emission factors for the turbine and boilers were obtained from the 2020 LRDP Update SEIR and CA Tower EIR. UC Davis also provided expected fuel consumption for the four new gas-fired condensing boilers that would be installed in the CUP Annex (Ramirez pers. comm.). GHG emissions generated by natural gas consumption were quantified using emission factors from the Climate Registry (2022). Because biomethane is derived from organic materials, such as food and animal waste, the combustion emissions are considered biogenic. As such, they do not add to the natural carbon cycle and are excluded from the analysis.[4]

CalEEMod was used to estimate mobile (i.e., landscaping) source emissions for the CUP Annex. CalEEMod default values for a 40,000-square-foot warehouse were assumed.

Fugitive methane and carbon dioxide emissions associated with the new gas meter and line were quantified using emissions factors from the 2020 LRDP Update SEIR.

While electricity would be consumed by the CUP and the CUP Annex, pursuant to the Sustainable Practices Policy, the Sacramento Campus is required to obtain 100 percent clean electricity from SMUD beginning in 2025. The campus is currently enrolled in SMUD's Greenergy Program and will continue to participate in SMUD's green energy programs to meet this requirement. Accordingly, there would be zero GHG emissions generated by purchased electricity under 2030 build conditions.

[4] The production and processing of biomethane also has a lower carbon intensity when compared to the extraction of raw materials and associated refining of fossil natural gas. However, emissions generated (or reduced) upstream (e.g., material manufacturing) and downstream (e.g., recycling) of the project, otherwise known as "lifecycle emissions," are not included in the analysis, consistent with guidance from the California Natural Resources Agency (2018:41–42).

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the 2020 LRDP Update would be considered to have a significant effect if it would result in any of the conditions listed below.

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

The following sections summarize the thresholds used to evaluate the significance of project-generated GHG emissions under each impact criterion.

Generate a Significant Amount of Greenhouse Gas Emissions

The California Supreme Court's decision in *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) (62 Cal.4th 204) confirmed that there are multiple potential pathways for evaluating GHG emissions consistent with CEQA. The decision clarified that use of statewide emission reduction targets is a "permissible criterion of significance" so long as substantial evidence and reasoned explanation is provided to relate those goals to project-specific emissions.

As discussed above, SMAQMD has adopted a threshold for stationary-source projects and a small-project screening metric for land use development projects (Ramboll 2020). Projects with operational emissions in excess of this screening metric can demonstrate a less-than-significant long-term GHG impact through compliance with best management practices. However, SMAQMD indicates that its land use development guidance may not be directly applicable to hospital projects (Ramboll 2020).

Given the seriousness of climate change and the regional significance of the Sacramento Campus, UC Davis has determined that, for the purposes of this analysis, any increase in GHG emissions above existing conditions (net zero) would result in a significant impact on the environment. The project would therefore result in a significant GHG impact if it increases GHG emissions above existing conditions (2019).

Conflict with Plans, Policies, or Regulations for Reducing Greenhouse Gas Emissions

The following GHG reduction plans, policies, and regulations are evaluated in this analysis. These are the GHG reduction plans, policies, and regulations most relevant to the project.

- Sustainable Practices Policy
- 2017 and 2022 Climate Change Scoping Plans
- SB 32 and AB 1279 GHG reduction targets

While quantitative near-term (2030) and long-term GHG thresholds were developed for the Sacramento Campus in the 2020 LRDP Update Final SEIR, it would be inappropriate to develop similar numeric thresholds for an individual project because GHG reduction planning is a campus-wide effort and not project specific. Accordingly, consistency of the project with GHG reduction plans and targets is assessed qualitatively.

Impacts and Mitigation Measures

Impact GHG-1: Generation of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (less than significant)

Summary of Impact GHG-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	–
CUP Expansion	LTS	None	–
SMUD Component	LTS	None	–
Whole project	LTS	None	–

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that the plan would result in a net reduction of GHG emissions, relative to existing conditions, with implementation of the Sustainable Practices Policy in effect at the time the 2020 LRDP Update Final SEIR was certified. Accordingly, the 2020 LRDP Update would not contribute a significant amount of GHG emissions or contribute to existing cumulative emissions.

CUP Expansion Project Impacts

The project would result in construction and operational GHG emissions that could contribute to climate change on a cumulative basis. Construction emissions would originate from mobile and stationary construction equipment exhaust, employee and haul-truck vehicle exhaust, electricity consumption, and tree removal. Operation of the project would generate GHG emissions from new and modified stationary (e.g., boilers) sources, mobile (i.e., landscaping equipment) sources, and fugitive (e.g., new gas meter) sources. Emissions from each of these sources were calculated using the methods detailed under *Methods for Analysis* above.

Table 3.7-3 summarizes the modeled construction and operational GHG emissions under existing (2019) and buildout (2030) conditions. As noted under *Methods for Analysis*, the construction analysis quantifies emissions from the make-ready projects and CUP expansion (excluding the SMUD Component). The operational analysis presented in Table 3.7-3 reflects adopted State regulations designed to reduce GHG emissions (e.g., RPS). The analysis also includes quantifiable emissions benefits that will be achieved by the Sustainable Practices Policy. As discussed above, the Sustainable Practices Policy includes a comprehensive set of strategies that will reduce campus GHG emissions. The following policies were specifically quantified and included in the operational analysis shown in Table 3.7-3.

- Demand-side load reduction in buildings served by the CUP stemming from green building design and energy efficiency improvements
- Procurement of 100 percent zero-carbon electricity beginning in 2025
- Procurement of 40 percent biomethane in the operational build year (2030)

Additional GHG reductions may be achieved by future federal and State GHG reduction policies. However, because the long-term climate change policy and regulatory changes to meet the AB 1279 reduction target are still evolving and the extent to which project emissions would be reduced through implementation of statewide (and nationwide) changes is not known, the calculation of operational emissions cannot take into account future unknown State or federal actions that may be taken to achieve long-term reductions. Operational emissions would therefore likely be lower than those presented in Table 3.7-3.

Table 3.7-3. Estimated GHG Emissions for Implementation of the Project

Source	Metric Tons CO_2e per Year
Existing (2019)	
Central Utility Plant [a, b]	59,218
2030 Project	
Central Utility Plant [a]	19,347
Central Utility Plant Annex [c]	5,746
Construction [d]	165
Total 2030 Project	25,258
Net Emissions from Existing	**-33,960**

Source: Appendix [B].

[a] Operational CUP analysis limited to emissions from the existing turbine, boilers, and purchased electricity (existing conditions only). Emissions from the CUP generators and chillers would not change with implementation of the project, relative to what has previously been analyzed and disclosed for the CUP in the 2020 LRDP Update SEIR or CA Tower EIR.

[b] Consistent with the 2020 LRDP Update SEIR, existing conditions for the CUP include purchased carbon allowances for stationary combustion in 2019.

[c] Includes emissions from the new boilers, mobile landscaping equipment, and new natural gas infrastructure. Generator emissions have been previously analyzed and disclosed as part of prior CUP analyses and would not change with implementation of the project, as noted above under (b).

[d] Total construction emissions (inclusive of sequestration loss) for the make-ready projects and CUP expansion (excluding the SMUD Component) amortized over 30 years.

As shown in Table 3.7-3, implementation of the project would generate 25,258 metric tons of CO_2e in 2030. Because UC Davis will purchase 100 percent zero-carbon electricity, almost all (99.3 percent) emissions are from stationary and mobile fuel combustion and the new natural gas infrastructure (fugitive), all of which are Scope 1 emission sources (refer to Table 3.7-1 for scope definitions). Emissions from construction (non-scope) of the make-ready projects and CUP expansion (excluding the SMUD Component) contribute about 0.7 percent of total quantified emissions. Construction of the SMUD Component would generate GHG emissions in addition to those modeled in Table 3.7-3. As discussed above, project-specific construction details for the SMUD Component are not currently available. Emissions estimates for the Cordova Park Project, which includes construction of a similar transmission line, are used as reasonable proxies for the SMUD Component. The EIR for the Cordova Park Project indicates that construction activities would generate 895 metric tons of CO_2e, or about 30 metric tons of CO_2e amortized over 30 years (SMUD 2022:3-5). When added to the construction emissions modeled for other project activities (Table 3.7-3), non-scope construction emissions would contribute about 0.8 percent of total project emissions.

Relative to existing conditions, implementation of the project would reduce GHG emissions by more than 33,000 metric tons of CO_2e. The reductions are a result of decreased reliance on natural gas

through the installation of more-efficient boilers and the use of biomethane and procurement of carbon-free electricity, pursuant to the Sustainable Practices Policy. Because the project would result in a net reduction of GHG emissions from existing conditions, implementation of the project would not contribute a significant amount of GHG emissions or contribute to existing cumulative emissions. Accordingly, this impact would be **less than significant** and the project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation is required.

Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases

Summary of Impact GHG-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	–
CUP Expansion	LTS	None	–
SMUD Component	LTS	None	–
Whole project	LTS	None	–

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that with implementation of Mitigation Measure LRDP-GHG-2, the plan would not conflict with applicable GHG plans or the State's long-term climate change goals.

CUP Expansion Project Impacts

The Sustainable Practices Policy and the UC Davis CAP are the relevant local GHG reduction plans with which to review compliance under this impact analysis. In the state context, consistency with the 2017 and 2022 Climate Change Scoping Plans and their associated State reduction targets (i.e., SB 32 and AB 1279, respectively) is assessed.[5]

University of California Sustainability Practices Policy and Climate Action Plan

The UC system and the Sacramento Campus are committed to responsible stewardship of resources and leadership in climate protection. As described above under Impact GHG-1, the project would result in large-scale GHG reductions compared to existing conditions. While some of these reductions will be achieved by State actions that reduce the carbon intensity of the future economy

[5] The 2020 LRDP Update SEIR also analyzed plan consistency with the Sacramento Area Council of Government's *2020 Metropolitan Transportation Plan/Sustainable Communities Strategy*. The project does not include any components that would change vehicle miles traveled or influence the transportation network and associated mobile-source emissions. Accordingly, the 2020 *Metropolitan Transportation Plan/Sustainable Communities Strategy* is not appliable to the proposed project and a consistency evaluation with its mobile-source GHG reduction targets is not required.

(e.g., SB 1020), a considerable amount is directly the result of the Sustainable Practices Policy in effect at the time the 2020 LRDP Update Final SEIR was certified. For example, among other things, all electricity would be purchased from zero-carbon sources and up to 40 percent of the fuel combusted at the CUP would be biomethane. The combination of these actions would lead to the emissions reductions, relative to baseline conditions, shown in Table 3.7-3. Ultimately, the project would implement the Sustainable Practices Policy, which in turn supports the CAP. Therefore, there is no conflict or inconsistency with UC Davis's local GHG reduction plans and policies.

Climate Change Scoping Plans and GHG Reduction Targets

The State's near-term GHG strategy is defined by SB 32. The 2017 Climate Change Scoping Plan identifies specific measures to reduce statewide GHG emissions and achieve the State's 2030 GHG reduction target pursuant to SB 32. Beyond these measures, the 2017 Climate Change Scoping Plan recommends that "projects incorporate design features and GHG reduction measures, to the degree feasible, to minimize GHG emissions" and that "achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development" (California Air Resources Board 2017:101).

Through implementation of the Sustainable Practices Policy, the project would be designed around the concept of sustainability. As a UC Davis Health facility, the project is required to comply with the Sustainable Practices Policy, including implementation of all applicable policies that will minimize GHG emission through onsite actions. These actions are incorporated into the project design. Ultimately, with implementation of the Sustainable Practices Policy, the project would result in large-scale GHG reductions compared to existing conditions. Accordingly, the project would achieve "no net additional increase in GHG emissions," consistent with CARB's recommendation in the 2017 Climate Change Scoping Plan, and would support attainment of the State's near-term 2030 GHG reduction target.

Based on CARB's 2022 Climate Change Scoping Plan, the 2045 milestone of reducing anthropogenic GHG emissions to 85 percent below 1990 levels and achieving carbon neutrality requires an aggressive reduction of fossil fuels wherever they are currently used in California, building on and accelerating carbon reduction programs that have been implemented by the previous 2017 Climate Change Scoping Plan. The 2022 Climate Change Scoping Plan indicates that reductions would need to come in the form of changes pertaining to transportation emissions, changes pertaining to sources of electricity and increased energy efficiency at existing facilities, and State and local plans, policies, or regulations that will lower GHG emissions relative to business-as-usual conditions. Independent studies reach similar conclusions. Deep reductions in GHG emissions can be achieved only with substantial changes in electricity production, transportation fuels, and industrial processes.

The July 2023 revisions to the Sustainable Practices Policy update the University's GHG reduction goals to focus on decarbonizing campus operations. The Sustainable Practices Policy requires each campus to complete a decarbonization assessment of Scope 1 emission sources and set Scope 1 GHG reduction targets for calendar years 2030, 2035, and 2040. As discussed in Chapter 2, *Project Description*, the CUP upgrades and expansion are part of a larger modernization effort to fully decarbonize and electrify the CUP to support the University's long-term sustainability goals. The implementation schedule for future decarbonization phases at the CUP will be outlined in the campus Scope 1 decarbonization study or equivalent, which much be submitted to the UC Office of the President prior to 2026.

Beyond 2040, as noted in Section 3.7.1, *Existing Conditions*, all University locations are required to reduce GHG emissions from all scopes 90 percent from 2019 levels by 2045, which aligns with the AB 1279 statewide target of reducing anthropogenic GHG emissions to 85 percent below 1990 levels. The CUP expansion and modification proposed under the project would set the Sacramento Campus on a path to carbon-free operations and support attainment of the University's and State's long-term 2045 GHG reduction targets. Accordingly, this impact would be **less than significant** and the project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation is required.

3.8 Hazards and Hazardous Materials

This section describes the regulatory and environmental setting for hazards and hazardous materials in the Central Utility Plant (CUP) Expansion Project area, analyzes effects on these resources that would result from implementation of the CUP Expansion Project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2020 Long Range Development Plan Update Supplemental EIR* (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

No comments specific to hazards and hazardous materials were received during the notice of preparation (NOP) comment period.

3.8.1 Existing Conditions

Regulatory Setting

Section 3.8 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for hazards and hazardous materials. The following discussion summarizes Section 3.1.1 of the 2020 LRDP Update SEIR and applicable updates since 2019.

University of California

The University of California Davis (UC Davis or University), as a constitutionally created State entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the University that are in furtherance of the University's educational purposes. However, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

Emergency Operations Plan

Under the emergency operations plan, the UC Davis Sacramento Campus conducts a formal hazard vulnerability analysis of potential hazards based on the prevailing internal and external environment within its demographic service area. The purpose of the hazard vulnerability analysis is to "identify events that could affect demand for services, the organization's ability to provide those services, the likelihood of those events occurring, and the consequences of those events."

Federal

The U.S. Environmental Protection Agency (EPA) is the principal federal regulatory agency responsible for the safe use and handling of hazardous materials. The key federal regulations pertaining to hazardous wastes relevant to the CUP Expansion Project area are listed here.

Resource Conservation and Recovery Act of 1976

The Resource Conservation and Recovery Act of 1976 (RCRA) (42 United States Code 6901–6987) provides for cradle-to-grave regulation of hazardous wastes and includes the Hazardous and Solid Waste Amendments of 1984 (HSWA). RCRA and HSWA protect human health and the environment and impose regulations on hazardous waste generators, transporters, and operators of treatment, storage, and disposal facilities. The corresponding regulations in 40 Code of Federal Regulations (CFR) 260–299 provide the general framework for managing hazardous waste, including requirements for entities that generate, store, transport, treat, and dispose of hazardous waste.

Occupational Safety and Health Standards

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The Occupational Safety and Health Administration (OSHA) is responsible for assuring worker safety in the workplace.

OSHA asbestos regulations are contained in 29 CFR. Lead-based paint regulations are described in the Lead-Based Paint Elimination Final Rule (24 CFR 33), governed by the U.S. Department of Housing and Urban Development.

The California Division of Occupational Safety and Health Administration (Cal/OSHA) regulations include extensive, detailed requirements for worker protection applicable to any activity that could disturb asbestos-containing materials, including maintenance, renovation, and demolition. These regulations are also designed to ensure that people working near the maintenance, renovation, or demolition activity are not exposed to asbestos. The Sacramento Campus complies with these State requirements related to occupational safety.

State

California hazardous materials and wastes regulations are equal to or more stringent than federal regulations. EPA has granted the State primary oversight responsibility to administer and enforce hazardous waste management programs. State regulations require planning and management to ensure that hazardous materials are handled, stored, and disposed of properly to reduce risks to human health and the environment.

California Accidental Release Prevention Program

As specified in 19 California Code of Regulations (CCR) 2, Chapter 4.5, Articles 1 through 11, all businesses that handle specific quantities of hazardous materials are required to prepare a California Accidental Release Prevention (CalARP) Program risk management plan (RMP). CalARP Program RMPs are required to be updated at least every 5 years and when there are significant changes to stored chemicals. In accordance with these provisions, the UC Davis Sacramento Campus is required to prepare an RMP for the use of aqueous ammonia above the California threshold quantity of 500 pounds at the UC Davis Sacramento Campus Central Energy Plant. The last RMP update was completed in July 2019 (UC Davis Sacramento Campus 2019).

California Health and Safety Codes

The California Environmental Protection Agency (Cal-EPA) has been granted primary responsibility by EPA for administering and enforcing hazardous materials management plans in California. Cal-EPA, more generally than EPA, defines a hazardous material as a material that, because of its

quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released (26 CCR 25501).

Chapter 6.95 of the California Health and Safety Code requires facilities that use, produce, store, or generate hazardous substances or have a change in business inventory to have a hazardous materials management plan or business plan.

Cortese List

Cal-EPA maintains the Hazardous Wastes and Substances Site (Cortese) List, a planning document used by state and local agencies and developers to comply with CEQA requirements in providing information about the locations of hazardous materials release sites. Per Government Code Section 65962.5, the Cortese List must be updated at least once annually. The California Department of Toxic Substances Control, State Water Resources Control Board (State Water Board), and California Department of Resources Recycling and Recovery contribute to the hazardous material release site listings.

Fire Hazard Severity Zones

Government Code Section 51178 requires the California Department of Forestry and Fire Protection to identify fire hazard severity zones in the state. Government Code Section 51179 requires a local agency to designate, by ordinance, fire hazard severity zones in its jurisdiction. Specifically, the State is required to designate Very High Fire Severity Zones in Local Responsibility Areas. Local Responsibility Areas consist of areas where local agencies are responsible for fire suppression rather than the state.

Worker Safety

Cal/OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices within the state. At sites known to be contaminated, a site safety plan must be prepared to protect workers. Cal/OSHA regulations include extensive, detailed requirements for worker protection applicable to any activity that could disturb asbestos-containing materials, including maintenance, renovation, and demolition. These regulations are also designed to ensure that people working near maintenance, renovation, or demolition activities are not exposed to asbestos.

Regional and Local

Certified Uniform Program Agency

Cal-EPA can delegate responsibility for many of its programs to a local government through certification as a certified uniform program agency (CUPA). A CUPA is responsible for implementing a unified hazardous materials and hazardous waste management program. Sacramento County, through its CUPA program, requires any business that handles hazardous materials above certain thresholds to prepare a hazardous materials business plan, which must include, in part, a hazardous materials inventory, a site map, an emergency response plan, and contact information.

City of Sacramento 2035 General Plan

Relevant goals and policies pertaining to hazards and hazardous materials include efforts to reduce exposure to hazardous materials and waste, in part, by enforcing requirements for preparation of a

hazardous material contamination management plan (PHS-3.1.2) and conducting reviews for proposed facilities that would produce or store hazardous materials (PHS-3.1.8) (City of Sacramento 2015).

Environmental Setting

The environmental setting section from the 2020 LRDP Update SEIR (Section 3.8.1, *Environmental Setting*), is still applicable to the CUP Expansion Project and is incorporated by reference. This section was also prepared using information from the Phase I Environmental Site Assessment (ESA) prepared for the project (Universal Engineering Sciences 2023). The ESA covered the CUP Annex portion of the project area.

Updated setting information not found in the 2020 LRDP Update SEIR and related to this project is presented below.

Hazardous Materials Sites in the Project Area

Previous Investigations

The 2020 LRDP Update SEIR identified three potential hazardous materials sites on the Cortese List. However, these sites have been investigated and remedial efforts completed. As such, these sites no longer pose a threat.

Current Investigations

A Phase I ESA was prepared to identify new or previously unknown potential hazardous sites in the CUP Annex portion of the project site (Universal Engineering Sciences 2023). The historical records indicated that painted bleachers were located on the southwestern portion of the CUP Annex site from at least 1947 to at least 1970. Given the years the painted bleachers were present, it is likely that lead-based paints were used in the construction and maintenance of the bleachers. Structure maintenance activities may have included the application of persistent pesticides (termiticides) around the foundation of the painted bleachers to prevent pest invasions, such as termites.

A former racetrack in the eastern portion of the CUP Annex site was present from approximately 1915 to at least 1970. There is the potential for soils containing miscellaneous debris, undocumented fill, and constituents of concern.

To identify potential hazardous sites in the project area outside the CUP Annex portion of the project site, government databases of hazardous waste sites and facilities were reviewed. This search of the Department of Toxic Substances Control's EnviroStor database and the State Water Board's GeoTracker database covered the project area (Department of Toxic Substances Control 2023). No new sites were identified on the Sacramento Campus.

However, the assessment resulted in the identification of one cleanup program site along the Sacramento Municipal Utility District (SMUD) Feeder Route 1 on Broadway and nine leaking underground storage tank (LUST) cleanup sites located along both SMUD Feeder Routes 1 and 2 on 65th Avenue.

A former dry cleaner at 5800 Broadway used a solvent perchloroethylene (PCE) during the 1950s until 1984, which subsequently leaked into groundwater. The contamination was discovered in 2012, during an environmental assessment of an adjacent property, when PCE was discovered in

groundwater samples. Remedial measures are underway to remove PCE from site soil and groundwater (Department of Toxic Substances Control 2023).

Nine LUST cleanup sites along 65th Street and one on Broadway have been investigated and remedial efforts completed. As such, these sites no longer pose a threat.

Schools

Hazardous emissions and accidental release or combustion of hazardous materials near existing schools could result in health risks or other dangers to students. The closest school to the project area is the Language Academy of Sacramento Charter School (formerly Marian Anderson Elementary School) approximately 250 feet south of the project area at 2850 49th Street, Sacramento (Figure 3.2.1). Tahoe Elementary School, at 3110 60th Street, is adjacent to Broadway and SMUD Feeder Route 1.

3.8.2 Environmental Impacts

Methods for Analysis

The baseline for hazards and hazardous materials includes the hazards and hazardous materials that currently exist in the project area. This section provides a discussion of the potential risks involving hazards and hazardous materials as a result of the project.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the CUP Expansion Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Result in hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.
- Place project-related facilities on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and resulting creation of a significant hazard to the public or the environment.
- Place project-related facilities within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard or excessive noise for people residing or working in the project area.
- Impair implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Issues Not Evaluated Further

The CUP Expansion Project area is not within 2 miles of an airport or airport land use plan. The closest airport is the Executive Airport 2.75 miles southwest of the project area. Helicopter air ambulances are in use near the project site. Since the helipad is an existing condition, construction and operation of the project would not increase the potential for airport safety hazards or result in exposing people to new, excessive noise. Therefore, the threshold of significance for a safety hazard or excessive noise near the project does not apply and is not evaluated further.

The project area is not in or near a state responsibility area or in a Very High Fire Severity Zone. The project area is designated as a Local Responsibility Area (California Department of Forestry and Fire Protection 2008) and is in a developed, urban setting consisting primarily of paved surfaces and landscaping. As a result, the project would not expose people or structures to a significant risk associated with wildland fires; therefore, no further analysis is required.

Impacts and Mitigation Measures

Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

Summary of Impact HAZ-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	LTS	None	-
Whole project	LTS	None	-

CUP = Central Utility Plant; SMUD = Sacramento Municipal Utility District; LTS = less than significant.

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that impacts related to the routine transport, use, or disposal of hazardous materials would result in less-than-significant impacts because the types of hazardous materials used during construction and operation (e.g., such as fuels and oils, to operate construction equipment or oils and lubricants on utility equipment) would be compliant with regulations enforced by the CUPA and Cal/OSHA. In addition, the implementation of standard best management practices under the stormwater pollution prevention plan (SWPPP) would further reduce the potential of accidental release or exposure.

CUP Expansion Project Impacts

Construction and operation of the CUP Expansion Project would result in the continued transport, use, and disposal of hazardous materials to and from the project site. The types of hazardous materials used at the Annex Building include various oils, fuels, lubricants to maintain and operate industrial equipment components. Accidental releases of small quantities of these substances during operation and maintenance could contaminate soils and degrade the quality of surface water and groundwater, or be released into the air, resulting in a potential public safety hazard. However, adherence to existing regulations and compliance with the safety procedures mandated by

applicable federal, state, UC, and local laws and regulations would minimize the risks resulting from the routine transportation, use, storage, or disposal of hazardous materials or hazardous wastes associated with construction and implementation of the project. The impact would be **less than significant.** Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation is required.

Impact HAZ-2: 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

Summary of Impact HAZ-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	S	LRDP-HAZ-2	LTS
SMUD Component	LTS	None	-
Whole project	LTS	None	-

CUP = Central Utility Plant; SMUD = Sacramento Municipal Utility District; LTS = less than significant; S = significant.

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that there is the potential to expose site workers, the public, and the environment to preexisting onsite contaminants during construction; therefore, Mitigation Measure LRDP-HAZ-2 (Prepare a Phase I Environmental Site Assessment) was included to reduce the impact to a less-than-significant level by requiring preparation of a Phase I ESA before all ground-disturbing construction in areas not previously investigated for each new project under the 2020 LRDP Update. If the Phase I ESA indicates likely site contamination, a Phase II ESA will be prepared which requires analysis and testing to determine the extant and severity of contamination.

In addition, the implementation of standard best management practices under the SWPPP would further reduce the potential of accidental release or exposure.

CUP Expansion Project Impacts

As required by Mitigation Measure LRDP-HAZ-2, current investigations included preparation of a Phase I ESA. The ESA identified a former racetrack and associated bleachers in the CUP Annex area of the project site. Due to the historical use of lead-based paints and persistent pesticides (termiticides) to treat pest infestations, there is the potential for these contaminants to be present in the soil around the foundation of the painted bleachers, which were in the southwestern portion of the CUP Annex. Soils around the former racetrack, in the eastern portion of the CUP Annex, also have the potential to contain miscellaneous debris or other constituents of concern. Ground-disturbing activities at the CUP Annex building site could expose construction workers and the public to contaminated soil or water. As described in Chapter 2, the existing Hazardous Waste Materials Facility is no longer needed and would be demolished. A hazardous materials management firm is

currently conducting testing and analysis on the site. If hazardous materials are identified, special handling of these materials would be managed and/or removed and disposed of by qualified contractors in accordance with applicable regulations.

Conducting a Phase II Environmental Site Assessment per Mitigation Measure LRDP-HAZ-2 would ensure this risk is minimized by requiring testing and evaluation of soils to be disturbed. The ESA prepared for the project recommends that UC Davis Health continue to implement the soil management plan prepared by Amec Foster Wheeler Environment & Infrastructure, Inc. (2017) and revised by Wood Environment & Infrastructure Solutions, Inc. (2019) that details the agreement between the Sacramento County Environmental Management Department regarding soil-disturbing activities associated with areas formerly occupied by the racetrack.

It is also recommended that soil samples be collected from the vicinity of the former bleacher structures to evaluate the potential presence of termiticides or lead from lead-based paint. Compliance with Mitigation Measure LRDP-HAZ-2 would reduce this impact to **less than significant with mitigation**. Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-HAZ-2: Prepare a Phase I Environmental Site Assessment

To minimize the risk of encountering unknown contamination during construction under the 2020 LRDP Update, the UC Davis Sacramento Campus would retain an environmental professional to prepare a Phase I Environmental Site Assessment before all ground-disturbing construction in areas not previously investigated. A Phase I Environmental Site Assessment would conform with the American Society for Testing and Materials Standard Practice E1527-05 and include, at a minimum, the following site assessment requirements.

- An onsite visit to identify current conditions (e.g., vegetative dieback, chemical spill residue, presence of above- or underground storage tanks).
- An evaluation of possible risks posed by neighboring properties.
- Interviews with persons knowledgeable about the site's history (e.g., current or previous property owners, property managers).
- An examination of local planning files to check prior land uses and any permits granted.
- File searches with appropriate agencies (e.g., State Water Board, fire department, county health department) having oversight authority relative to water quality and groundwater and soil contamination.
- Examination of historical aerial photography of the site and adjacent properties.
- A review of current and historic topographic maps of the site to determine drainage patterns.
- An examination of chain-of-title for environmental liens and/or activity and land use limitations.

If the Phase I Environmental Site Assessment indicates likely site contamination, a Phase II Environmental Site Assessment will be performed (also by an environmental professional).

A Phase II Environmental Site Assessment would comprise the following.

- Collection of original surface and/or subsurface samples of soil, groundwater, and building materials to analyze for quantities of various contaminants.
- An analysis to determine the vertical and horizontal extent of contamination (if the evidence from sampling shows contamination).

If contamination is uncovered as part of Phase I or II Environmental Site Assessments, remediation per EPA's RCRA regulations in 40 CFR Parts 260–299 will be required, and materials will be properly managed and disposed of prior to construction.

Any contaminated soil identified on a project site must be properly disposed of in accordance with Department of Toxic Substances Control regulations in effect at the time.

If, during construction, soil or groundwater contamination is suspected, construction activities in the vicinity of the discovery will cease and appropriate health and safety procedures will be implemented, including the use of appropriate personal protective equipment (e.g., respiratory protection, protective clothing, helmets, goggles).

Impact HAZ-3: Result in hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school

Summary of Impact HAZ-3 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	LTS	None	-
Whole project	LTS	None	-

CUP = Central Utility Plant; SMUD = Sacramento Municipal Utility District; LTS = less than significant.

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that impacts related to hazardous materials or emissions within 0.25 mile of a school would be less than significant because of compliance with existing safety plans, programs, practices, and procedures (e.g., UC Davis Health Education & Research Emergency Action & Evacuation Plan). Continued compliance with these plans would ensure that impacts related to hazardous materials or emissions within 0.25 acre of a school would be less than significant.

CUP Expansion Project Impacts

The Tahoe Elementary School is within 0.25 mile of the SMUD Feeder Route 1. The plans identified above would apply for this component of the project and would include implementation of standard best management practices under the SWPPP, which require a spill prevention plan. Also, adherence to existing federal, state, and local regulations regarding the transportation, handling, and disposal of hazardous materials would further reduce the potential of the project to result in emitting hazardous emissions or acutely hazardous materials, substances, or waste within 0.25 mile of an

existing or proposed school. Therefore, the impact would be **less than significant.** The CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures are necessary.

Impact HAZ-4: Place project-related facilities on a site that is included on a list of hazardous materials sites, and resulting creation of a significant hazard to the public or the environment

Summary of Impact HAZ-4 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	S	LRDP-HAZ-2	LTS
Whole project	LTS	None	-

CUP = Central Utility Plant; SMUD = Sacramento Municipal Utility District; LTS = less than significant; S = significant.

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR found that new facilities would not be located on a site that is included on a list of hazardous materials site per Government Code Section 65962.5, and that the potential to encounter soil and groundwater contamination during construction was less than significant.

CUP Expansion Project Impacts

As described in Section 3.8.1 *Environmental Setting*, the ESA did not identify any listed hazardous materials sites at the CUP Annex. A search of government databases of hazardous waste sites and facilities reviewed for the project did identify one cleanup program site along the SMUD Feeder Route 1 at 5800 Broadway. Although remedial efforts are underway, encountering contaminated soils or groundwater during construction of the feeder route could expose workers to health risks. However, compliance with Mitigation Measure LRDP-HAZ-2 would reduce this impact by requiring testing to evaluate the potential presence of PCE in soil and groundwater at this location (5800 Broadway) of the SMUD Feeder Route 1. Compliance with Mitigation Measure LRDP-HAZ-2 would reduce this impact to **less than significant with mitigation.** Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-HAZ-2: Prepare a Phase I Environmental Site Assessment

See above under Impact HAZ-2 for full text.

Impact HAZ-5: Impair implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan

Summary of Impact HAZ-5 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	LTS	None	-
Whole project	LTS	None	-

CUP = Central Utility Plant; SMUD = Sacramento Municipal Utility District; LTS = less than significant.

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that impacts on emergency response or evacuation plans would be less than significant because existing emergency response plans are adequate to prepare, mitigate, and respond to any type of threat or hazard or incident that could affect the demand for services provided by the UC Davis Sacramento Campus. For the off-campus SMUD Component and City-owned roadways, the contractor would implement the UC Davis Health Education & Research Emergency Action & Evacuation Plan (2021), as well as a construction traffic management plan as identified in the 2020 LRDP Update SEIR. Together, these measures would reduce this impact and ensure that construction activity would not significantly affect an emergency response plan or emergency evacuation plans.

CUP Expansion Project Impacts

Construction of the CUP Expansion Project, make-ready projects, and roadway improvements could require temporary traffic detours or lane closures. However, UC Davis Sacramento Campus would continue to follow the UC Davis Health Education & Research Emergency Action & Evacuation Plan. If needed, alternate routes would be established before any temporary closures and routes for evacuation, in case of an emergency, would be established and remain open. The contractor would ensure that emergency access is maintained at all times. Therefore, the impact would be **less than significant.** Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures are necessary.

3.9 Hydrology and Water Quality

This section describes the regulatory and environmental setting for hydrology and water quality in the Central Utility Plant (CUP) Expansion Project area, analyzes effects on hydrology and water quality that would result from implementation of the CUP Expansion Project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

No comments specific to hydrology and water quality were received during the Notice of Preparation comment period.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2020 Long Range Development Plan Update Supplemental EIR* (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150(c)). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.9.1 Existing Conditions

3.9.1.1 Regulatory Setting

Section 3.9 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for hydrology and water quality. The following discussion summarizes Section 3.9.1 of the 2020 LRDP Update SEIR and applicable updates since 2019.

University of California

As noted in Section 3.0.2, *University of California Autonomy*, the University of California, Davis (UC Davis or University) as a constitutionally created State entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by UC Davis that are in furtherance of its educational purposes. However, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

Federal

Clean Water Act

The federal Clean Water Act (CWA) was enacted with the primary purpose of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. The CWA directs states to establish water quality standards for all "waters of the United States" and to review and update such standards on a triennial basis.

The following are important CWA sections.

- Section 303(d) requires that states make a list of waters that are not attaining water quality standards. For waters on this list (and where the U.S Environmental Protection Agency [EPA] administrator deems they are appropriate), states develop total maximum daily loads (TMDLs).

TMDLs are established at the level necessary to implement the applicable water quality standards.

- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the United States to obtain certification from the State that the discharge will comply with other provisions of the act. Under the CWA, the Regional Water Quality Control Board (RWQCB) must issue or waive a Section 401 Water Quality Certification for a project to be permitted under CWA Section 404.
- Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the United States RWQCBs administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and municipal separate storm sewer systems (MS4s).

NPDES General Permit for Construction Activities

Most construction activities that disturb 1 acre of land or more are required to obtain coverage under the NPDES General Permit for Construction Activities (Construction General Permit). The State Water Board has issued a statewide Construction General Permit (Order No. 2022-0057-DWQ, NPDES No. CAS000002), adopted September 8, 2022. Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as stockpiling or excavation, that result in soil disturbances of at least 1 acre of total land area. The Construction General Permit requires the applicant to file a notice of intent (NOI) to discharge stormwater and to prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and a description of proposed construction activities, along with a demonstration of compliance with relevant local ordinances and regulations, and an overview of the best management practices (BMPs) that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Permittees are further required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) is responsible for determining, based on U.S. Army Corps of Engineers studies, flood elevations, and floodplain boundaries. FEMA is also responsible for distributing Flood Insurance Rate Maps (FIRMs), which are used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including the 100-year floodplain. FEMA allows non-residential development in the floodplain; however, construction activities are restricted within the flood hazard areas, depending on the potential for flooding within each area.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is established and implemented by the State Water Board and nine RWQCBs. The act requires projects that are discharging, or proposing to discharge, wastes that could affect the quality of the state's water to file a waste

discharge report with the appropriate RWQCB. The Porter-Cologne Act also requires that the State Water Board or an RWQCB adopt basin plans for the protection of water quality. The *Water Quality Control Plan for the Sacramento and San Joaquin River Basins* (Basin Plan) specifies region-wide and water body–specific beneficial uses and sets numeric and narrative water quality objectives for several substances and parameters in numerous surface and groundwater in its region (Central Valley Regional Water Quality Control Board 2019). The project site lies within the jurisdiction of the Central Valley RWQCB. The Basin Plan was last updated in 2019. Pursuant to the Clean Water Act NPDES program, the RWQCB issues permits for point source discharges that must meet the water quality objectives and must protect the beneficial uses defined in the Basin Plan.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act of 2014 (SGMA) provides a framework for sustainable management of groundwater supplies by local authorities, with a limited role for state intervention only if necessary to protect the resource. The plan is intended to ensure a reliable groundwater water supply for California for years to come. SGMA requires the formation of local Groundwater Sustainability Agencies (GSA), which are required to adopt groundwater sustainability plans (GSPs) to manage the sustainability of groundwater basins. GSAs for all high- and medium-priority basins, as identified by the Department of Water Resources, must adopt a GSP.

The UC Davis Sacramento Campus overlies the South American groundwater subbasin, which is designated as a high-priority basin. Groundwater in the basin is managed under the Sacramento Central Groundwater Authority (SCGA) GSA. The South American Subbasin *Groundwater Sustainability Plan* manages groundwater sustainability in the South American groundwater subbasin (Larry Walker Associates and Woodard & Curran2021).

Local

Sacramento Municipal Separate Storm Sewer Systems

Phase I Municipal Separate Storm Sewer Systems (MS4) regulations cover municipalities with more than 100,000 residents, certain industrial processes, or construction activities that disturb an area of 5 acres or more. MS4 permits require cities and counties to develop and implement programs and measures, including management practices, control techniques, system design and engineering methods, and other measures, as appropriate, to reduce the discharge of pollutants in stormwater discharges to the maximum extent possible. As part of permit compliance, permit holders create stormwater management plans (SWMPs), also known as stormwater quality improvement programs (SQIPs), for their respective locations. The Central Valley RWQCB adopted a Region-wide MS4 Permit, *National Pollutant Discharge Elimination System Permit and Waste Discharge Requirements General Permit for Discharges from Municipal Separate Storm Sewer Systems* (Region-wide Permit) on June 23, 2016. Phase I MS4 permittees would enroll under the Region-wide Permit (NPDES Order R5-2016-0040; NPDES No. CAS0085324) as their current individual permits expire.

Older sections of Sacramento also collect stormwater in the combined sewer pipes, as described in Section 3.9.1, *Environmental Setting*, which conveys both wastewater and storm drain runoff in a single pipe. Discharges from the combined system would comply with the waste discharge requirements for the City of Sacramento Combined Wastewater Collection and Treatment System (NPDES Order R5-2020-0039; NPDES No. CA0079111).

However, facilities with no exposure of the facility's industrial activities, equipment, and materials to stormwater may submit a No Exposure Certification (NEC) to the State Water Resources Control Board, in accordance with the requirements of the Industrial Activities Stormwater General Permit (General Permit 2014-0057-DWQ). Under the NEC, the Sacramento Campus is required to eliminate unauthorized non-stormwater discharges such as leaks or spills, and protect industrial materials and activities from exposure to precipitation and/or runoff. If the State Water Resources Control Board denies the NEC, or if the facility operator determines that NEC eligibility requirements are no longer being met, the facility operator must collect and analyze samples from two storm events during each wet season and report results to the State Water Resources Control Board. Stormwater runoff from the project site is managed under the requirements of an NEC, and not via the Regionwide MS4 Permit.

General Waste Discharge Requirements/NPDES Permit for Limited Threat Discharges to Surface Waters

The *Waste Discharge Requirements Limited Threat Discharges to Surface Waters* General Order (ORDER R5-2022-0006-01) was adopted in February 2022. The order applies to individuals, public agencies, private businesses, and other legal entities discharging limited-threat wastewater to waters of the United States including clean or relatively pollutant-free wastewaters that pose little or no threat to water quality such as construction dewatering, condensate, or other wastewater that require treatment. Wastewater that may contain toxic organic constituents, volatile organic compounds, petroleum fuel pollution constituents, pesticides, inorganic constituents, chlorine, and other chemical constituents for which treatment technologies are well established to eliminate constituents that pose a threat to water quality require treatment prior to discharge. Dischargers of wastewaters must obtain authorization under this general order. To obtain authorization for discharges to surface water, Dischargers must submit a complete NOI.

Sacramento Area Flood Control Agency

The Sacramento Area Flood Control Agency (SAFCA) was formed in 1989 to address the Sacramento area's vulnerability to catastrophic flooding. This vulnerability was exposed during the record flood of 1986, when Folsom Dam exceeded its normal flood-control storage capacity, and several area levees nearly collapsed under the strain of the storm. In response, the City of Sacramento, Sacramento County, Sutter County, the American River Flood Control District, and Reclamation District (RD) No. 10000 created SAFCA through a Joint Exercise of Powers Agreement to provide the Sacramento region with increased flood protection along the American and Sacramento Rivers.

City of Sacramento 2035 General Plan

As a State entity, the University is exempted by the state constitution from compliance with local land use regulations, including general plans and zoning, whenever using property under its control in furtherance of its educational mission. Therefore, references to the *City of Sacramento 2035 General Plan* are only to provide context for the impact analysis. Relevant goals and policies pertaining to water quality, hydrology, and floodplains are listed in the Environmental Resources Element and the Environmental Constraints Element of the *City of Sacramento 2035 General Plan* (City of Sacramento 2015).

City of Sacramento Stormwater Ordinances

The purpose of the stormwater management and discharge control ordinance (Sacramento Municipal Code Section 13.16) is to control non-stormwater discharges to the stormwater conveyance system; eliminate discharges to the stormwater conveyance system from spills, dumping, or disposal of materials other than stormwater; and reduce pollutants in urban stormwater discharges to the maximum extent practicable. The purpose of the grading, erosion, and sediment control ordinance (Sacramento Municipal Code Section 15.88) is to regulate grading to avoid pollution of watercourses with nutrients, sediments, or other materials generated or caused by surface water runoff.

City of Sacramento Stormwater Quality Improvement Program

The City of Sacramento Stormwater Quality Improvement Program is a comprehensive program composed of various program elements and activities designed to reduce stormwater pollution to the maximum extent practicable and eliminate prohibited non-stormwater discharges through an NPDES municipal stormwater discharge permit. The City of Sacramento established the SQIP to reduce the pollution carried by stormwater into local creeks and rivers in compliance with the municipal stormwater NPDES permit. The comprehensive plan includes pollution reduction measures for construction sites, industrial sites, illegal discharges and illicit connections, new development, and municipal operations.

Sacramento Region Stormwater Quality Design Manual

The *Stormwater Quality Design Manual for Sacramento Region* provides locally adapted information for design and selection of multiple categories of stormwater quality control measures: source control, hydromodification control, treatment control, and low-impact development measures (Brown et al. 2018). The 2018 edition of the manual is based on the *2007 Stormwater Quality Design Manual for the Sacramento and South Placer Regions*, but has been revised to incorporate hydromodification management and low-impact development design standards.

UC Sustainable Practices Policy

There are no policies related to water quality and hydrology. However, relevant procedures pertaining to water quality and stormwater are listed in the *University of California Policy on Sustainable Practices,* including sustainable Water Systems – Water Action Plans related to water usage and reduction strategies (University of California 2023).

3.9.1.2 Environmental Setting

This section discusses the environmental setting relevant to hydrology and water quality in the CUP Expansion Project area. The regional and campus-wide environmental setting from the 2020 LRDP Update, which is incorporated by reference, is largely unchanged. Several projects are being constructed, including Parking Structure 5, Aggie Square, the Sacramento Ambulatory Surgery Center, and the California Hospital Tower. These projects have been analyzed in the overall growth scenario of the 2020 LRDP Update and have undergone project-level environmental review. These other projects would not affect the project site.

Surface and Ground Water Hydrology

The Sacramento Campus CUP is in the 27,000-square-mile Sacramento River Basin, approximately 1.5 miles south of the American River and 3 miles east of the Sacramento River. The city of Sacramento, including the Sacramento Campus, uses surface water from the Sacramento and American Rivers and groundwater pumped from the North American and South American subbasins to meet its water demands. Potable water is supplied to the campus, in addition to the CUP, from the City via a network of water infrastructure. Please see Section 3.16, *Utilities and Service Systems*, for more information on water supply serving the campus.

The campus is within the South American groundwater subbasin, within the larger Sacramento Valley Groundwater Basin. The South American groundwater subbasin is considered a high-priority basin. The intensive use of groundwater in the basin has resulted in a general lowering of groundwater elevations near the center of the basin away from the sources of recharge; however, the basin is not in critical overdraft. Existing groundwater wells on the Sacramento Campus are used for irrigation and emergency purposes.

The Sacramento Campus is largely developed with minimal pervious areas. The proposed PS 6 access road would be located on a vegetated area adjacent to the major campus open space, resulting in approximately 0.5 acre of new impervious surface. The majority of the UCDH, including the CUP Expansion Project site, is served by a network of combined sewer pipes. These pipes, maintained by the City of Sacramento, convey a combination of storm sewage and sanitary sewage from the campus to public wastewater treatment plants. The largest combined sewer main has sizes ranging from 54 to 60 inches in diameter and runs under V Street along the north side of campus, before being directed south through the Hospital zone, and exiting the campus across Stockton Boulevard to Sherman Way. Within the campus, additional combined sewers exist under Y Street, 2nd Avenue, and 48th Street. Within each zone, UCDH storm and sewer mains are generally kept separated until the connections to the public combined sewer mains within or immediately adjacent to the public rights of way. A combined storm-sewer overflow system was installed within the UCDH campus in 2001 (Affiliated Engineers 2022). The current CUP has a Class II wastewater discharge permit with two outfalls. One is a storm drain on the north side of the CUP and the other is in the existing CUP building and used to discharge process wastewater. Two additional storm drains located near the CUP discharge to the combined sewer system. Storm drains around the Facilities Support Services building are all on the combined system.

Storm drains convey stormwater runoff from parking lots and building roofs to the public storm drain mains and combined storm-sewer mains. UCDH storm drain pipes vary in size from 6 inches to 18 inches in diameter. Generally, the campus drains into two separate portions of the City system. Any connections to the combined sewer system on the north portion of the campus do not require treatment and would be held to predevelopment discharge rates. Any campus areas that discharge to other City systems would be responsible for treating and detaining in accordance with City standards.

Surface Water Quality

Stormwater flows from the western half and excess flows from the eastern half of the campus are detained onsite before they are discharged into the City's combined sewer system or to the American River.

The combined sewer system is considered at or near capacity and requires all additional inflow to be offset. During smaller storms, the City sends up to 60 million gallons per day (mgd) of wastewater to the Sacramento Regional Wastewater Treatment Plant, which treats stormwater and sanitary sewage prior to discharge into the Sacramento River. When the flows exceed 60 mgd, flows are routed to Pioneer Reservoir, a primary treatment facility adjacent to the Sacramento River. Once the capacity of Pioneer Reservoir is reached, flows are routed to the City's Combined Wastewater Treatment Plant, before ultimately being treated and discharged to the Sacramento River. Under extreme high-flow conditions, discharge of untreated combined wastewater from the combined sewer system may occur (City of Sacramento 2009). Please see Section 3.16, *Utilities and Service Systems*, for more information on the combined sewer and storm drainage facilities that serve the campus.

Flood Hazards

The Sacramento Campus, including the CUP Expansion Project site and SMUD Component, are outside of the 100-year floodplain, within FEMA Zone X (Federal Emergency Management Agency 2012, 2012b). FEMA Zone X (unshaded) is an area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. The area west of the campus is within FEMA Zone X (shaded), base floodplains areas with reduced flood risk due to levee protection. The campus is approximately 90 miles east of the Pacific Ocean. Therefore, the Sacramento Campus is not subject to inundation by a tsunami. No large waterbodies are near the campus; therefore, the project would not be prone to inundation by a seiche.

3.9.2 Environmental Impacts

This section describes the environmental impacts associated with hydrology and water quality that would result from implementation of the CUP Expansion Project. It describes the methods used to determine the effects of implementation of the CUP Expansion Project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts are provided, if applicable.

3.9.2.1 Methods for Analysis

The analysis of potential hydrologic and water quality impacts resulting from construction and operation of the CUP Expansion Project is based on a comparison of baseline conditions, as described in Section 3.9.1.2, *Environmental Setting*, to expected conditions during and after construction of the project. Evaluation of potential hydrologic and water quality impacts is based on a review of existing documents and studies that address water resources in the vicinity of the study area. The analysis focuses on issues related to surface hydrology, groundwater supply, surface and groundwater quality, and flood hazards. The key construction-related impacts were identified and evaluated qualitatively based on the physical characteristics of implementation of the CUP Expansion Project and the magnitude, intensity, location, and duration of activities.

3.9.2.2 Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the CUP Expansion Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Violation of any water quality standards or waste discharge requirements or other substantial degradation of surface or groundwater quality.
- Substantial decrease of groundwater supplies or substantial interference with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- Substantial alteration of the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation onsite or offsite.
- Substantial alteration of the existing drainage pattern of the project site or area that would increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite.
- Creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Alteration of the existing drainage pattern in a manner that would impede or redirect flood flows.
- In flood hazard, tsunami, or seiche zones, risk of release of pollutants as a result of project inundation.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Issues Not Evaluated Further

As discussed in Section 3.9.1, *Existing Conditions* under *Environmental Setting* in the 2020 LRDP Update SEIR, the LRDP area would not be subject to risk of flooding. Therefore, the CUP Expansion Project area and SMUD Component are not subject to flooding or inundation by flooding, seiche, or tsunami, and there would be no risk of release of pollutants as a result of project inundation. During construction activities, stormwater BMPs would be implemented, as required by federal, state, county, and local policies to minimize degradation of water quality associated with stormwater runoff or construction-related pollutants. In addition, construction activities and operation would comply with local stormwater ordinances, stormwater requirements established by the NEC, University sustainability practices and procedures for stormwater management, and regional waste discharge requirements. Measures to reduce the risk of pollutants in a storm event are discussed under Impact LRDP-WQ-1 and Impact LRDP-WQ-3. Because the proposed CUP Expansion Project area is not subject to flooding due to flood hazard, tsunami, or seiche inundation, there would be no impact. Therefore, the impact of risk of release of pollutants as a result of project inundation is not evaluated further.

3.9.2.3 Impacts and Mitigation Measures

Impact WQ-1: Violation of any water quality standards or waste discharge requirements or other degradation of surface or groundwater quality

Summary of Impact WQ-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	LTS	None	-
Whole project	LTS	None	-

CUP = Central Utility Plant; SMUD = Sacramento Municipal Utility District; LTS = less than significant.

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that construction activities associated with implementation of the 2020 LRDP Update could result in short-term water quality impacts associated with soil erosion and subsequent sediment transport via storm drains. However, implementation of standard erosion control measures and BMPs, as identified in the SWPPP which is required by the NPDES Construction General Permit for construction projects over 1 acre, and compliance with the University of California sustainability practices and procedures for stormwater management would reduce potential adverse water quality impacts. Changes in impervious area under implementation of the 2020 LRDP Update would not substantially change the type or amount of associated pollutants. Therefore, water quality impacts would be **less than significant**.

CUP Expansion Project Impacts

Similarly, construction activities under the make-ready projects, CUP Expansion Project, and SMUD Component would comply with the applicable stormwater requirements such as the NPDES Construction General Permit, University of California sustainability practices and procedures for stormwater management, and the NEC, which contain standards to ensure that water quality is not degraded during construction. Storm drains convey stormwater from parking lots and building roofs to the public storm drain mains and combined storm-sewer mains. Any connections to the combined sewer system does not require treatment. Areas that discharge to other City systems require treatment and detention in accordance with City standards. In addition, surface landscaping design, green roofs, permeable pavements, and stormwater treatment devices would be considered to increase runoff permeability and reduce stormwater runoff flows. Stormwater runoff flows would be more accurately determined once the conceptual landscaping and paving plan is finalized. Impervious surface areas are not expected to increase compared to existing conditions because future development occurs as the result of the overarching campus sustainability goals. Implementation of the project would not violate any water quality standards or waste discharge requirements. Therefore, water quality impacts would be **less than significant**. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Impact WQ-2: Substantial decrease of groundwater supplies or substantial interference with groundwater recharge such that the project may impede sustainable groundwater management of the basin

Summary of Impact WQ-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	LTS	None	-
Whole project	LTS	None	-

CUP = Central Utility Plant; SMUD = Sacramento Municipal Utility District; LTS = less than significant.

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that changes in impervious surface area would not cause substantial change or interference with groundwater recharge or increase groundwater demands. Implementation of landscaping would allow for infiltration and groundwater recharge. Groundwater impacts were determined to be less than significant.

CUP Expansion Project Impacts

Groundwater is used for irrigation and emergency purposes throughout the Sacramento Campus. In addition, two emergency water pumps serve emergency domestic water feeds to the hospital. One of these wells is closed and will be replaced with a new well. The well would be connected to a cooling tower in an isolated system and would only be used in an emergency.

The emergency domestic water pipes are separate from the standard domestic water loop around the hospital, and no direct connections between these networks are made within the site. Existing cooling towers could receive untreated groundwater during a short-term emergency event. As a result, some water uses, which represent approximately one-third of the CUP demand (approximately 124 gallons per minute), would need to receive treated groundwater. However, groundwater use during normal operations would be similar to existing conditions. In addition, surface landscaping would use water-efficient landscaping to minimize the use of groundwater supply. Therefore, groundwater impacts would be **less than significant**. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Impact WQ-3: Substantial alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation onsite or offsite; substantial increase in the amount of surface runoff in a manner that would result in flooding onsite or offsite; creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; alteration of the existing drainage pattern in a manner that would impede or redirect flood flows

Summary of Impact WQ-3 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	S	LRDP-WQ-1	LTS
CUP Expansion	S	LRDP-WQ-1	LTS
SMUD Component	LTS	None	-
Whole project	S	LRDP-WQ-1	LTS

CUP = Central Utility Plant; SMUD = Sacramento Municipal Utility District; S = significant.

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that changes in impervious area would not substantially change the quantity of stormwater discharge, or result in flooding or additional sources of polluted runoff. However, construction activities may expose soils that contain an excessive amount of water. Implementation of Mitigation Measure LRDP-WQ-1 was determined to reduce the impact to a less-than-significant level.

CUP Expansion Project Impacts

Construction

During construction, stormwater drainage patterns could be temporarily altered. However, BMPs required in the SWPPP would be implemented to minimize the potential for erosion or siltation in nearby storm drains and temporary changes in drainage patterns during construction. Measures required by the NPDES Construction General Permit would also limit site runoff during construction and would not alter stormwater drainage patterns. BMPs would be implemented to control construction site runoff, ensure proper stormwater control and treatment, and reduce the discharge of pollution to the storm drain system. Therefore, construction would not substantially alter the existing drainage pattern of the area in a manner that would result in substantial erosion or siltation or increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite. However, construction activities may expose soils that contain an excess amount of water. As a result, damage to buildings or landscaping may result. Mitigation Measure LRDP-WQ-1 would require implementation of a subsoil drainage system to avoid potential damage, based on site-specific soil conditions. Alteration of existing drainage patterns is not anticipated for the SMUD component. Implementation of Mitigation Measure LRDP-WQ-1 would reduce the impact to **less than significant with LRDP mitigation**. Thus, the project would not result in a new or more severe impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-WQ-1: Implement a Subsoil Drainage System to Avoid Damage to Buildings

In the event a subsoil drainage system is required (as determined by a geotechnical analysis), the system will be installed underground to remove excessive water from the soil, and avoid damage to buildings or landscaping. Groundwater from exterior building footings will be conveyed to a sump pump. The effluent will be pumped into the building storm drainage system. Subsoil drainage systems that cannot discharge to the storm sewer by gravity flow will be drained by gravity to sump pumps and will be pumped into the building storm drainage system. Each sump pump will be sized for 100 percent of the estimated design flow. Sump pumps will be connected to the emergency (standby) power system to permit operation during a loss of normal power. Design criteria for the subsoil drainage system will be defined by the geotechnical report.

Operation

The Sacramento Campus is largely developed with minimal green space, including the CUP Expansion Project site. The major open space area is located west of the Facility Support Services Building. Impervious surface areas are assumed to increase slightly compared to existing conditions. The amount of impervious surface cover is related to stormwater runoff. Larger areas of impervious surface are associated with larger volumes and flows of stormwater runoff. Therefore, stormwater flows would increase slightly. Reduction of stormwater flows associated with impervious surfaces is possible through sustainable site design including the implementation of green roofs, bioswales, permeable pavements, landscaping that promotes infiltration and evapotranspiration, and a reduction in impervious surface areas. Excess stormwater would continue to be detained onsite before it is released to the receiving water body, reducing peak flows that could result in downstream flooding. A Water Action Plan would provide practices to prevent stormwater pollution during operation, as required by University of California sustainability practices and procedures for stormwater management. Stormwater runoff flows would be more accurately determined once the conceptual landscaping and paving plan is finalized. In addition, during site development, storm drainpipe segments would be studied for capacity and potential upsizing or hydraulic grade line considerations on the impacted site (Affiliated Engineers 2022).

The largest combined sewer main runs under V Street along the north side of campus, before turning south through the Hospital zone. Additional combined sewers exist under Y Street, 2nd Avenue, and 48th Street. New sanitary sewer laterals would convey wastewater from buildings to the existing combined sewers. To maintain the current operation of the combined sewer overflow system, future connections or demand flows would be directed to the Y-Street section of the combined sewer. Therefore, impacts would be **less than significant**. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Impact WQ-4: Conflict with or obstruct implementation of a water quality control plan or a sustainable groundwater management plan

Summary of Impact WQ-4 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	NI	None	-
CUP Expansion	NI	None	-
SMUD Component	NI	None	-
Whole project	NI	None	-

CUP = Central Utility Plant; SMUD = Sacramento Municipal Utility District; NI = no impact.

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that with implementation of commonly practiced construction BMPs and sustainable site design features, there would be no conflict with or obstruction of implementation of a water quality control plan or sustainable groundwater management plan, and there would be no impact.

CUP Expansion Project Impacts

Similarly, during construction of the make-ready projects, CUP Expansion Project, and SMUD Component, commonly practiced BMPs would be implemented to control construction site runoff and to reduce the discharge of pollutants to storm drain systems from stormwater and other nonpoint-source runoff. As part of complying with permit requirements during ground-disturbing or construction activities, implementation of water quality control measures and BMPs would ensure that water quality standards would be achieved, including the water quality objectives that protect designated beneficial uses of surface water and groundwater, as defined in the basin plan. Construction runoff would also have to comply with the appropriate water quality objectives for the region. The NPDES Construction General Permit also requires stormwater discharges not to contain pollutants that cause or contribute to an exceedance of any applicable water quality objectives or water quality standards, including designated beneficial uses. Incorporation of sustainable site design features such as surface landscaping design, green roofs, permeable pavements, and stormwater treatment devices would also reduce stormwater runoff flows and associated pollutants. In addition, implementing the appropriate general plan policies would require the protection of groundwater recharge areas and groundwater resources, as required by a sustainable groundwater management plan. Therefore, there would be **no impact**. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

3.10 Land Use and Planning

This section describes the regulatory and environmental setting for land use and planning in the area for the Central Utility Plant (CUP) Expansion Project, analyzes effects on land use and planning that would result from implementation of the CUP Expansion Project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

In response to the notice of preparation (NOP) for this environmental impact report (EIR), commenters expressed the following concerns related to land use and planning:

The City of Sacramento indicated that the Stockton Boulevard Plan should be included in the EIR.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the 2020 Long-Range Development Plan Update Supplemental EIR (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.10.1 Existing Conditions

Regulatory Setting

Section 3.10 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for land use and planning. The following discussion summarizes Section 3.10.1 of the 2020 LRDP Update SEIR and applicable updates since 2019.

University of California

As noted in Section 3.0.2, *University of California Autonomy*, the University of California (UC or University), as a constitutionally created State of California (State) entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the UC that are in furtherance of its educational purposes. However, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

City of Sacramento General Plan

The City of Sacramento (City) 2035 General Plan was adopted by the City Council on March 3, 2015 (City of Sacramento 2015). It promotes "Smart Growth" principles as a way of accommodating projected population increases while improving the quality of life in the city. Six themes underlie and support the "Smart Growth" vision, as outlined below.

- Making great places
- Growing smarter
- Maintaining a vibrant economy

- Creating a healthy city
- Living lightly and reducing our carbon footprint
- Developing a sustainable future

The City's 2040 General Plan Update is currently in the public review phase. The 2040 General Plan Update is focused on ensuring sustainable and equitable growth to accommodate the projected 69,000 new homes and 77,000 new jobs anticipated in the city by 2040. The plan emphasizes compact development patterns with an efficient delivery of public services and reduced vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions (City of Sacramento 2023).

Stockton Boulevard Plan

The City is partnering with residents, businesses, and organizations to revitalize the Stockton Boulevard corridor and plan for future growth. Some of the primary goals are to improve the quality of life, increase economic opportunity for residents and businesses, and increase community ownership (City of Sacramento 2022). A "community working version" of the plan is available. A public review draft is anticipated sometime in 2023.

Environmental Setting

For existing and surrounding land uses, refer to Section 3.10, *Land Use and Planning*, in the 2020 LRDP Update SEIR.

Study Area

The site for the CUP Expansion Project covers 6.41 acres on the UC Davis Sacramento Campus, which is approximately 2.5 miles southeast of downtown Sacramento, 17 miles east of the main UC Davis campus in Davis, and 90 miles northeast of San Francisco (Figure 2-2). The 6.41-acre site is owned by the University and currently used for the CUP, the CUP yard, and CUP ancillary facilities, along with the Facility Support Services Building (FSSB) and major open space. The site is currently designated as "Education, Research, and Housing" in the 2020 LRDP Update (Figure 3.10-1). On the Sacramento Campus, the site for the CUP Expansion Project is adjacent to the major open space area to the west, 2nd Avenue to the north, 49th Avenue to the east, and Parking Structure 6 (PS 6) to the south. Under the CUP Expansion Project, the project site would change from a mix of 3.17 acres for education and research and 3.24 acres for support to 6.41 acres for support (Figure 3.10-2).

3.10.2 Environmental Impacts

This section describes the environmental impacts associated with land use and planning that would result from implementation of the CUP Expansion Project. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts are provided, if applicable.



Source: UC Davis Health, 2023.

Graphics ... 104689 (09-14-2023) JC

UCDAVIS

Figure 3.10-1
Existing LRDP Land Use



Source: UC Davis Health, 2023.

Graphics ... 104689 (09-14-2023) JC

UCDAVIS

Figure 3.10-2
Proposed LRDP Land Use

Methods for Analysis

This analysis is based on a review of documents pertaining to the site for the CUP Expansion Project, along with an analysis of the potential compatibility of the project with existing and planned land uses near the project site. In determining the level of significance of project impacts, this analysis assumes that the project would comply with the 2020 LRDP Update, as modified, and local general plan policies, where feasible.

Thresholds of Significance

See Section 3.10 in the 2020 LRDP Update SEIR for a discussion of applicable significance criteria.

Issues Not Evaluated Further

Because all activities that would occur under the CUP Expansion Project would be within the boundaries of the UC Davis Sacramento Campus, the project would not physically divide a community, as noted in the 2020 LRDP Update SEIR. No aspect of the project would physically divide a community; therefore, this issue is not discussed further.

Impacts and Mitigation Measures

Impact LU-1: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Summary of Impact LU-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	LTS	None	—
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that development on the Sacramento Campus would be governed by the 2020 LRDP Update, which covers the site for the CUP Expansion Project. Accordingly, within project boundaries, the CUP Expansion Project would not conflict with any applicable land use plan. This impact was determined to be less than significant.

CUP Expansion Project Impacts

The CUP Expansion Project, if approved, would be subject to the 2020 LRDP Update. Pursuant to the University's constitutional autonomy, UC Davis is the only agency with land use jurisdiction over Sacramento Campus projects. The project would not involve expansion of the existing campus boundary; as such, the project would not involve the potential acquisition of lands currently subject to the City's municipal planning efforts for its 2040 General Plan Update.

Under the CUP Expansion Project, existing campus land use designations for the project site would be modified to accommodate development of the project. Figures 3.10-1 and 3.10-2 show existing and proposed land uses for the project site, respectively. The 3.17-acre area with the "Education and Research" land use designation would change to "Support," which would allow for construction of the CUP Annex and new PS6 entry. Although these land use changes associated with the project would represent a change in existing University-related uses on the Sacramento Campus, they would further the goals of the 2020 LRDP Update, providing the facilities and infrastructure required to facilitate continued growth of the research enterprise at the Sacramento Campus. This would foster interaction and collaboration between all campus programs and disciplines and address seismic and other code-related deficiencies in aging buildings by replacing them with state-of-the-art facilities for health care and health care–related research. However, the types of land use changes that would occur with the project (e.g., CUP expansion, roadway improvements, utilities improvements) would remain consistent with, and complementary to, the current type of land uses on the campus. Within the boundaries of the Sacramento Campus, the CUP Expansion Project would not conflict with any applicable land use plan, including proposed land use amendments. This impact would be **less than significant**.

The project would further the goals and objectives of the 2020 LRDP Update. Therefore, development of the project is not anticipated to result in land use conflicts within the Sacramento Campus. Although the Sacramento Campus is not subject to municipal land use regulations when use of the property is in furtherance of the University's educational mission, implementation of the project would not be in conflict with existing plans, policies, or regulations set forth by local jurisdictions for the purposes of reducing or mitigating environmental impacts (e.g., the Sacramento 2035 General Plan [City of Sacramento 2015]), nor would it result in land use conflicts. Project-related work on local streets within Sacramento would be temporary and would not result in changes in land uses or conflict with existing plans or policies, including the City General Plan and the Stockton Boulevard Plan, as described in Section 3.15. The CUP Expansion Project would occur on land within the campus boundary owned by UC Davis. It would not result in changes in City land use designations or land use patterns. Therefore, this impact would remain **less than significant**. The CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures would be necessary.

3.11 Noise

This section describes the regulatory and environmental setting for noise in the area for the Central Utility Plant (CUP) Expansion Project, analyzes effects on noise that would result from implementation of the CUP Expansion Project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

No comments specific to noise were received during the notice of preparation (NOP) comment period.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the 2020 Long-Range Development Plan Update Supplemental Environmental Impact Report (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.11.1 Existing Conditions

Regulatory Setting

Section 3.11 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for noise and vibration. The following discussion summarizes Section 3.11.1 of the 2020 LRDP Update SEIR and applicable updates since 2019 and includes regulatory information that is applicable to the proposed project.

University of California

There are no University of California (UC or University) regulations specifically related to noise that applied to the 2020 LRDP Update, nor do they apply to the CUP Expansion project.

Federal

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. As discussed in the 2020 LRDP Update, EPA administrators determined in 1981 that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982, responsibilities for regulating noise control policies were transferred to state and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated federal agencies where relevant.

Federal Transit Administration Vibration Impact Criteria

Federal Transit Administration (FTA) provides guidance for evaluating the effects of vibration levels on humans from various vibration-inducing events, including construction activities and vibration from railroads. The impact criteria are based on receptor categories and the frequency of events occurring in one day. Table 3.11-1 summarizes the FTA vibration impact criteria.

Table 3.11-1. Federal Transit Administration Ground-borne Vibration Impact Criteria

Land Use Category	GBV Impact Levels (VdB re 1 micro-inch/sec)		
	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB[d]	65 VdB	65 VdB
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	80 VdB

Source: Federal Transit Administration 2018.

GBV = ground-borne vibration; VdB = vibration decibels.

a. "Frequent Events" is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.

b. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this number of operations.

c. "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.

d. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. For equipment that is more sensitive, a detailed vibration analysis must be performed.

State

The State of California (State) has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels from motor vehicles, sound transmission through buildings, occupational noise controls, and noise insulation.

California Department of Transportation

The California Department of Transportation (Caltrans) provides guidelines regarding vibration associated with construction and operation of transportation infrastructure. Table 3.11-2 provides Caltrans' vibration guidelines for potential damage to different types of structures.

Table 3.11-2. Caltrans Vibration Guidelines for Potential Damage to Structures

Structure Type and Condition	Maximum Peak Particle Velocity (PPV, in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation 2020.

Note: Transient sources create a single, isolated vibration event (e.g., blasting or the use of drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = peak particle velocity; in/sec = inch per second.

Ground-borne vibration and noise can also disturb people. People are generally more sensitive to vibration during nighttime hours when sleeping than during daytime waking hours. Numerous studies have been conducted to characterize the human response to vibration. Table 3.11-3 provides Caltrans' guidelines regarding vibration annoyance potential (expressed here as peak particle velocity [PPV]).

Table 3.11-3. Caltrans Guidelines for Vibration Annoyance Potential

	Maximum PPV (in/sec)	
Human Response	**Transient Sources**	**Continuous/Frequent Intermittent Sources**
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation 2013b.

Note: Transient sources create a single, isolated vibration event (e.g., blasting or the use of drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = peak particle velocity; in/sec = inch per second.

Regional and Local

The University's Sacramento Campus conducts its work on land owned or controlled by the Board of Regents of the University of California. As a State entity, the University is exempt under the State constitution from compliance with local land use regulations, including general plans and zoning ordinances, whenever use of a property under its control is in furtherance of its educational mission. However, the University seeks to develop its property in a manner that minimizes potential conflicts with the land use policies and plans of local jurisdictions to the extent feasible. The Sacramento Campus is in the city of Sacramento.

The following subsection summarizes policies contained in City of Sacramento (City) General Plan regarding noise as well as the City Noise Ordinance.

City of Sacramento General Plan

The most recent update to the Sacramento 2035 General Plan was adopted in March 2015. The goals and policies related to noise are intended to help control and reduce environmental noise in the city. The general plan also includes land use compatibility guidelines to help direct new development to areas with noise levels that are suitable for the types of development proposed. The compatible noise level is 60 A-weighted decibels (dBA), day-night sound level (L_{dn}), for single-family residential uses and is 65 dBA L_{dn} for multi-family residential and hotel/motel uses. Schools, hospitals, and nursing homes are considered compatible with exterior noise levels of up to 70 dBA L_{dn}. Refer to Table 3.11-6 for the exterior noise compatibility standards for all land uses in the city. The City General Plan noise policies pertaining to the project include the following (City of Sacramento 2015):

> **Policy EC 3.1.1:** Exterior Noise Standards. The City shall require noise mitigation for all development where the projected exterior noise levels exceed those shown in Table EC 1 [Table 3.11-4, General Plan Exterior Noise Compatibility Standards for Various Land Uses, below], to the extent feasible.

Table 3.11-4. General Plan Exterior Noise Compatibility Standards for Various Land Uses

Land Use Type	Highest Level of Noise Exposure Regarded as "Normally Acceptable"[a] (L_{dn}[b] or CNEL[c])
Residential—Low-Density Single-Family, Duplex, Mobile Homes[f]	60 dBA[d, e]
Residential—Multi-family[g]	65 dBA
Urban Residential Infill[h] and Mixed-Use Projects[i, j]	70 dBA
Transient Lodging—Motels, Hotels	65 dBA
Schools, Libraries, Churches, Hospitals, Nursing Homes	70 dBA
Auditoriums, Concert Halls, Amphitheaters	Mitigation based on site-specific study
Sports Arena, Outdoor Spectator Sports	Mitigation based on site-specific study
Playgrounds, Neighborhood Parks	70 dBA
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75 dBA
Office Buildings—Business, Commercial and Professional	70 dBA
Industrial, Manufacturing, Utilities, Agriculture	75 dBA

Source: City of Sacramento 2015.

a. As defined in the Governor's Office of Planning and Research Guidelines, "Normally Acceptable" means that the "specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements."

b. L_{dn}, or day-night average level, is an average 24-hour noise measurement that factors in day and night noise levels.

c. CNEL, or community noise equivalent level, measurements are a weighted average of sound levels gathered throughout a 24-hour period.

d. Applies to the primary open space area of a detached single-family home, duplex, or mobile home, which is typically the backyard or fenced side yard, as measured from the center of the primary open space area (not the property line). This standard does not apply to secondary open space areas, such as front yards, balconies, stoops, and porches.

e. dBA, or A-weighted decibel scale, is a measurement of the noise level.

f. The exterior noise standard for the residential area west of McClellan Airport, known as McClellan Heights/Parker Homes, is 65 dBA.

g. Applies to the primary open space areas of townhomes and multi-family apartments or condominiums (private rear yards for townhomes; common courtyards, roof gardens, or gathering spaces for multi-family developments).These standards do not apply to balconies or small attached patios in multi-storied multi-family structures.

h. With land use designations of Central Business District, Urban Neighborhood (Low, Medium, or High) Urban Center (Low or High), Urban Corridor (Low or High).

i. All mixed-use projects located anywhere in the city of Sacramento.

j. See notes d and g, above, for a definition of primary open space areas for single-family and multi-family developments.

Policy EC 3.1.2: Exterior Incremental Noise Standards. The City shall require noise mitigation for all development that increases existing noise levels by more than the allowable increment shown in Table EC 2 [Table 3.11-5, General Plan Exterior Incremental Noise Impact Standards for Noise-Sensitive Uses, below], to the extent feasible.

Policy EC 3.1.3: Interior Noise Standards. The City shall require new development to include noise mitigation to ensure acceptable interior noise levels appropriate to the land use type: 45 dBA L_{dn} for residential, transient lodgings, hospitals, nursing homes and other uses where people normally sleep and 45 dBA L_{dn} (peak hour) for office buildings and similar uses.

Policy EC 3.1.4: Interior Noise Review for Multiple, Loud Short-Term Events. In cases where new development is proposed in areas subject to frequent high-noise events (such as aircraft overflights or train and truck passbys), the City shall evaluate noise impacts on any sensitive receptors from such events when considering whether to approve the development proposal, taking into account potential for sleep disturbance, undue annoyance, and interruption in conversation, to ensure that the proposed development is compatible within the context of its surroundings.

Table 3.11-5. General Plan Exterior Incremental Noise Impact Standards for Noise-Sensitive Uses (dBA)

Residences and Buildings Where People Normally Sleep[a]		Institutional Land Uses with Primarily Daytime and Evening Uses[b]	
Existing L_{dn}	Allowable Noise Increment	Existing Peak Hour L_{eq}	Allowable Noise Increment
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

Source: City of Sacramento 2015.

dBA = A-weighted decibel; L_{dn} = day-night average level; L_{eq} = equivalent sound level.

a. This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.

b. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material.

Policy EC 3.1.5: Interior Vibration Standards. The City shall require construction projects anticipated to generate significant amount of vibration to ensure acceptable interior vibration levels at nearby residential and commercial uses, based on the current City or Federal Transit Administration (FTA) criteria.

Policy EC 3.1.7: Vibration. The City shall require an assessment of the damage potential of vibration-induced construction activities, highways, and rail lines in proximity to historic buildings and archaeological sites and require all feasible mitigation measures be implemented to ensure no damage would occur.

Policy EC 3.1.8: Operational Noise. The City shall require mixed-use, commercial, and industrial projects to mitigate operational noise impacts on adjoining sensitive uses when operational noise thresholds are exceeded.

Policy EC 3.1.10: Construction Noise. The City shall require development projects subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on these uses, to the extent feasible (City of Sacramento 2015).

The City's 2040 General Plan is currently in the public review phase (City of Sacramento 2023). For the purposes of this analysis, the adopted general plan noise standards are used.

Sacramento City Code Noise Ordinance

Chapter 8.68 of the Sacramento City Code governs noise and vibration within the city. Noise thresholds from the City Municipal Code that are relevant for the 2020 LRDP Update are presented below.

8.68.060 Exterior Noise Standards

A. The following noise standards, unless otherwise specifically indicated in this article, shall apply to all agricultural and residential properties.

   1. From 7 a.m. to 10 p.m., the exterior noise standard shall be 55 dBA.

2. From 10 p.m. to 7 a.m., the exterior noise standard shall be 50 dBA.

B. It is unlawful for any person at any location to create any noise that causes the noise levels, when measured on agricultural or residential property, to exceed for the duration of time set forth following [shown in Table 3.11-6] the specified exterior noise standards in any 1 hour by:

Table 3.11-6. City of Sacramento Noise Ordinance Cumulative Intrusive Sound Limits

Cumulative Duration of the Intrusive Sound	Allowable Decibels
Cumulative period of 30 minutes per hour	0
Cumulative period of 15 minutes per hour	+5
Cumulative period of 5 minutes per hour	+10
Cumulative period of 1 minute per hour	+15
Level not to be exceeded for any time per hour	+20

Source: Sacramento City Code, Chapter 8.68, Section 8.68.060, 2009.

C. Each of the noise limits specified in Subsection B of this section shall be reduced by 5 dBA for impulsive or simple tone noises or for noises consisting of speech or music.

D. If the ambient noise level exceeds that permitted by any of the first four noise limit categories specified in Subsection B of this section, the allowable noise limit shall be increased in 5 dBA increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the fifth noise level category, the maximum ambient noise level shall be the noise limit for that category (prior code Section 66.02.201).

8.68.080 Exemptions

The following applicable activities shall be exempted from the provisions of this chapter:

A. School bands and school athletic and entertainment events. School entertainment events shall not include events sponsored by student organizations.

B. Activities conducted at parks and public playgrounds, provided such parks and public playgrounds are owned and operated by a public entity.

C. Any mechanical device, apparatus, or equipment related to or connected with emergency activities or emergency work.

D. Noise sources due to the erection (including excavation), demolition, alteration, or repair of any building or structure between the hours of 7 a.m. and 6 p.m. on Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday and between 9 a.m. and 6 p.m. on Sunday, provided, however, that the operation of an internal-combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers that are in good working order. The director of building inspections may permit work to be done during the hours not exempt by this subsection in the case of urgent necessity and in the interest of public health and welfare for a period not to exceed 3 days. Application for this exemption may be made in conjunction with the application for the work permit or during progress of the work.

G. Noise sources associated with maintenance of street trees and residential area property, provided said activities take place between the hours of 7 a.m. and 6 p.m.

8.68.100 Schools, Hospitals and Churches

It is unlawful for any person to create noise that causes the noise level at any school, hospital, or church while the same is in use to exceed the noise standards specified in Section 8.68.060 of this chapter or to create any noise that unreasonably interferes with the use of such institution or unreasonably disturbs

or annoys patients in the hospital. In any disputed case, interfering noise that is 10 dBA or more greater than the ambient noise level at the building shall be deemed excessive and unlawful.

8.68.200 Specific Unlawful Noises

Notwithstanding any other provision of the chapter to the contrary, the following acts, among others, are declared to be loud, disturbing, and unnecessary noises in violation of this chapter, but such enumeration shall not be deemed to be exclusive, namely:

A. Pile drivers, hammers, etc. The operation between the hours of 10 p.m. and 7 a.m. of any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other appliance, the use of which is attended by loud or unusual noise.

B. Tools. The use or operation between the hours of 10 p.m. and 7 a.m. of any power saw, power planer, or other powered tool or appliance or saw or hammer, or other tool, so as to disturb the quiet, comfort, or repose of persons in any dwelling, hotel, motel, apartment, or other type of residence or of any person in the vicinity.

Environmental Setting

This section describes the environmental setting relevant to noise in the area covered by the 2020 LRDP Update. The section provides background information related to noise and vibration and a discussion of noise sources and ambient noise levels on the Sacramento Campus under existing conditions.

Project Site and Surrounding Land Uses

The UC Davis Sacramento Campus covers approximately 146 acres (with the addition of the Rehab Hospital). It is approximately 2.5 miles southeast of downtown Sacramento and 17 miles east of the UC Davis main campus in Davis. The Sacramento Campus is bounded by V Street to the north, Stockton Boulevard to the west, Broadway to the south, and a residential neighborhood to the east (Figure 2-3). The existing Central Utility Plant (CUP) is west of the intersection of 49th Street and 2nd Avenue.

Land uses surrounding the CUP include campus buildings as well as the Language Academy of Sacramento (a school). Residential land uses are also located in the general vicinity of the CUP Expansion Project. The Ronald McDonald House is approximately 715 feet northeast of the construction areas for the project, and the Courtyard Sacramento Midtown, a hotel, is approximately 855 feet northwest of the project site. The closest single-family residence is approximately 940 feet east of the project site, and the Kiwanis Family House is approximately 1,120 feet southeast of the project site.

Existing Noise Sources

The campus is in an area with heavy roadway and freeway traffic but outside of residential neighborhoods. Stockton Boulevard and Broadway are adjacent to the campus. The major roadways affect noise levels in the project area.

Existing sources of stationary noise in the project area include common building mechanical equipment and the equipment associated with the Sacramento Campus Central Cogeneration Plant (Central Energy Plant), such as air conditioners, chillers, ventilation systems, pumps, cooling towers, and emergency generators.

The closest airport to the UC Davis Sacramento Campus is Sacramento Executive Airport, which is approximately 3 miles southwest of the project site. Although noise from aircraft overflights is

occasionally perceptible within the project area, it does not have a substantial influence on the overall noise environment in the campus vicinity. The project site is also currently exposed to noise from helicopter takeoff and landing operations associated with the transport of patients requiring urgent care. As described in the 2020 LRDP Update SEIR, there are an average of approximately three helicopter landing and takeoff cycles per day.

Characterization of Ambient Noise Levels

The ambient noise levels in the project vicinity are dominated largely by traffic along major roadways in the area. The monitoring or measuring of ambient noise is commonly done to help characterize the existing ambient noise levels in the vicinity of a given project. The 2010 LRDP noise analysis included ambient noise monitoring data from various locations on and near the Sacramento Campus. The characterization of ambient noise for the 2020 LRDP Update through noise measurements was not possible because California and the Sacramento region were under shelter-in-place orders as a result of the coronavirus pandemic. Ambient noise levels collected for the 2010 LRDP analysis are presented to provide background information regarding existing noise levels in the project vicinity. In addition, ambient noise measurements collected for other recent projects at the campus are presented below.

For the 2010 LRDP EIR, ambient noise levels were monitored by Illingworth & Rodkin on January 27 and 28, 2010. Short-term measurements (15 minutes in duration) were taken at 10 locations, and unattended long-term (24 hours in duration) measurements were taken at three locations (University of California 2010). The measurement locations are shown in Figure 3.11-1. The off-campus long-term noise measurement locations were selected to be representative of the noise-sensitive residential receptors on the campus periphery that are most likely to be affected by the additional noise that would be generated by LRDP-related noise sources. On-campus long-term noise measurements were conducted near the Central Energy Plant to document noise emissions from this facility. Measured data reported in the environmental noise assessment are shown in Table 3.11-7 and Table 3.11-8. Table 3.11-7 shows that measured ambient noise levels ranged from 59 to 66 dBA, equivalent sound level (L_{eq}), in the Sacramento Campus vicinity in 2010. Table 3.11-8 shows the results of the 2010 short-term measurements. The measured ambient noise levels ranged from 52 to 62 dBA L_{eq} along the campus perimeter. Near the Central Energy Plant (ST-5a to ST-5f), the measured noise levels ranged from 68 dBA at 100 feet from the western face of the cooling tower structure to between 54 and 59 dBA at the sidewalk setback surrounding the Central Energy Plant building (ST-b to ST-e).

Table 3.11-7. 2010 LRDP Long-Term Noise Measurement Data Summary

2010 LRDP Site ID	Measurement Location	Measurement Date	24-hour L_{eq} (dBA)	24-hour L_{dn} (dBA)
LT-1	Utility pole at the edge of the single-family residential area north of V Street opposite the hospital emergency/loading entrance	1/27/10–1/28/10	66	67
LT-2	Utility pole at residential property line at end of Y Street (eastern edge of the campus)	1/27/10–1/28/10	59	61
LT-3	Light standard in residential area at the western edge of the campus (approximately 20 feet from the centerline of Y Street and 200 feet from the centerline of Stockton Boulevard)	1/27/10–1/28/10	62	63

Source: University of California 2010.
dBA = A-weighted decibels; L_{dn} = day-night average level; L_{eq} = equivalent sound level

Table 3.11-8. 2010 LRDP Short-Term Noise Measurement Data Summary

2010 LRDP Site ID	Measurement Location	Measurement Date	Noise Sources	L_{eq}	L_{dn}
ST-1	V Street near Emergency Room	1/28/10	Traffic	52	53
ST-2	Residence at 2nd Avenue opposite MIND Institute Lab and Clinic	1/28/10	Traffic	53	60
ST-3	Broadway Senior Center	1/28/10	Traffic	61	68
ST-4	Residential area near 2nd Avenue and Stockton Boulevard	1/28/10	Traffic	62	67
ST-5a	Perimeter of Central Energy Plant, near Facility Support Services Building	1/28/10	Central Energy Plant/ mechanical equipment	68	68
ST-5b	Perimeter of Central Energy Plant	1/28/10	Central Energy Plant/ mechanical equipment	54	59
ST-5c	Perimeter of Central Energy Plant	1/28/10	Central Energy Plant/ mechanical equipment	55	59
ST-5d	Perimeter of Central Energy Plant	1/28/10	Central Energy Plant/ mechanical equipment	56	60
ST-5e	Perimeter of Central Energy Plant	1/28/10	Central Energy Plant/ mechanical equipment	59	61
ST-5f	Perimeter of Central Energy Plant	1/28/10	Central Energy Plant/ mechanical equipment	59	61

Source: University of California 2010.
L_{dn} = day-night average level; L_{eq} = equivalent sound level

Although noise measurements were not taken for the 2020 LRDP Update SEIR, due to the reasons described above, noise measurements have been conducted by ICF for other recent projects at the UC Davis Sacramento Campus. Specifically, ICF conducted noise measurements for the Parking Structure 7 Project and the Modular Fitness Center Project, both of which included measurement locations near the site for the proposed project and close to the nearest noise-sensitive uses. Refer to Table 3.11-9, below, for the noise measurement survey results for these projects and Figures 3.11-2a and 3.11-2b for the noise measurement locations.

3.11.2 Environmental Impacts

This section describes the environmental impacts related to noise and vibration that would result from implementation of the project. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) any significant impacts are provided, if appropriate.

Table 3.11-9. Long-Term Noise Measurement Data Summary from Other UCD Sacramento Campus Projects

Project	Site ID	Measurement Location	Measurement Date	Day 1 L_{dn}	Day 2 L_{dn}	Day 1 12-Hour L_{eq}	Day 2 12-Hour L_{eq}
Modular Fitness Center	F-LT-1	East of 49th Street, north of the Elmhurst Medical Center Community Garden and south of V Street	01/12/2022 – 01/13/2022	65.1	--	58.8	--
Modular Fitness Center	F-LT-2	Cul-de-sac of Y Street, west of 50th Street	01/12/2022 – 01/13/2022	64.3	--	57.4	--
Modular Fitness Center	F-LT-3	Northeast corner of Language Academy of Sacramento Campus	01/12/2022 – 01/13/2022	67.3	--	59.3	--
Modular Fitness Center	F-LT-4	Northwest corner of Language Academy of Sacramento Campus	01/12/2022 – 01/13/2022	65.5	--	57.4	--
Modular Fitness Center	F-LT-5	Southwest corner of 45 Street and Y Street	01/12/2022 – 01/13/2022	67.6	--	62.7	--
Modular Fitness Center	F-LT-6	East of the UC Davis hospital library building	04/26/2022 – 04/28/2022	60.9	63.5	57.0	57.6
Modular Fitness Center	F-LT-7	Near the southwest corner of the UC Davis hospital library building	04/26/2022 – 04/28/2022	62.1	63.8	56.6	58.3
Parking Structure 7	PS-LT-1	Near backyards of residences along Fairgrounds Drive, south of Stride Court	05/16/2023 – 05/18/2023	59.4	57.4	54.6	52.6
Parking Structure 7	PS-LT-2	Near northeast corner of UC Davis MIND Institute	05/16/2023 – 05/18/2023	62.2	60.7	56.9	58.4
Parking Structure 7	PS-LT-3	Northeast corner of Kiwanis House	05/16/2023 – 05/18/2023	60.6	58.8	58.3	52.6

Source: ICF, Modular Fitness Center Addendum (University of California, Davis 2022), Parking Structure 7 Addendum (University of California, Davis 2023). Refer to Appendix D for more details regarding the noise measurements.

L_{dn} = day-night average level; L_{eq} = equivalent sound level

Methods for Analysis

Construction Noise

Estimates of construction noise levels from development under the 2020 LRDP Update were based on reference emission levels and usage factors from the Federal Highway Administration (FHWA) *Road Construction Noise Model User's Guide* (Federal Highway Administration 2006). Project-specific construction data, including a list of equipment proposed for use by phase, was provided by UC Davis for the proposed project. As a result, project-specific construction noise modeling was based on reference noise levels from the FHWA Roadway Construction Noise Model (RCNM) (Federal Highway Administration 2006). The FTA recommends generating a combined construction noise level for a given construction phase by combining noise levels from the two loudest pieces of equipment expected to operate simultaneously in roughly the same location. To ensure a conservative evaluation for this analysis, noise from the three loudest pieces of equipment expected to operate in a given portion of the project site during a given construction phase was combined (assuming simultaneous operation).

The FHWA noise source data used in the construction noise analysis include the A-weighted maximum sound levels (L_{max}) measured at a distance of 50 feet from the construction equipment as well as the usage factors for the equipment. The usage factor is the percentage of time each piece of construction equipment is typically operating at full power and used to estimate L_{eq} values from L_{max} values. Noise levels (L_{eq}) from the three loudest pieces of equipment proposed for concurrent use during each phase were combined to determine the loudest construction phases associated with the project. Reasonable worst-case noise levels, based on the loudest phase of construction, are estimated at nearby noise-sensitive land uses.

Note that noise sources due to the erection (including excavation), demolition, alteration, or repair of any building or structure between the hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday are exempt from the numerical standards for noise in Sacramento, provided that the operation of an internal-combustion engine is equipped with suitable exhaust and intake silencers in good working order. Most construction activities for the project would occur during these hours. However, because some nighttime construction could occur, the potential for construction noise impacts to occur during non-exempt hours is also evaluated.

Outside of the exempt daytime hours, construction noise in Sacramento is limited by the Exterior Noise Standards contained in the Sacramento City Code (i.e., 55 dBA from 7:00 a.m. to 10:00 p.m. and 50 dBA from 10:00 p.m. to 7:00 a.m.). Therefore, outside of the daytime exempt hours, estimated construction is compared to 55 dBA between the hours of 6:00 p.m. and 10:00 p.m. and 50 dBA between the hours of 10:00 p.m. and 7:00 a.m.

Operational Noise

With regard to stationary sources of operational noise, this assessment considers the potential for noise from stationary equipment (e.g., boilers, batteries, pumps, emergency generators) to exceed applicable noise limits. Noise impacts from the testing of the three emergency generators at the CUP Annex were evaluated in the California Hospital Tower EIR but at slightly different distances from nearby sensitive uses compared with the distances associated with the proposed project. The previously presented analysis from the California Hospital Tower EIR is included below but modified to present estimated noise levels from generator testing at the updated distances.

Vibration Impacts

The discussion below summarizes the methodology applied in this assessment of potential annoyance- and damage-related vibration impacts from construction. Operations associated with the project are not anticipated to generate perceptible levels of vibration at either onsite or offsite receptors because no proposed equipment would impart energy into the ground like construction equipment.

Vibration-Related Annoyance

The City General Plan environmental constraints section pertaining to noise provides requirements for interior vibration standards and damage to historic or archaeological structures but does not provide specific vibration thresholds. In the absence of significance thresholds for vibration from construction, the *Sacramento 2035 General Plan* states that the FTA vibration criteria can be used. Therefore, the FTA's general assessment criteria for evaluating potential construction-generated vibration impacts is used in this analysis (included in Table 3.11-1, presented previously). Vibration from project construction activities is estimated and predicted vibration levels at nearby sensitive uses are compared to applicable criteria to determine if significant vibration-related annoyance impacts would occur.

Vibration-Related Structural Damage

To determine if construction activities have the potential to damage nearby buildings, vibration levels at nearby receptors are calculated using source vibration levels and the attenuation equation of $PPV = PPV_{ref} \times (25/distance)^{1.5}$ (Federal Transit Administration 2018). These calculated values are then compared to structural damage criteria for nearby structures. For purposes of this analysis, Caltrans guidelines regarding vibration damage effects are used. Table 3.11-2 shows Caltrans' vibration guidelines for potential damage to different types of structures.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the CUP Expansion Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.

  Although City of Sacramento standards are not applicable to the University of California, UC Davis does not have noise standards for the Sacramento Campus. For purposes of this SEIR, the City of Sacramento noise thresholds are used to identify the significance of noise impacts.

- Generation of excessive ground-borne vibration or ground-borne noise levels.
- The exposure of people residing or working in the project area to excessive noise levels from aircraft activity for a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport.

Impacts and Mitigation Measures

Impact NOI-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from construction activities in excess of applicable standards

Summary of Impact NOI-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	S	LRDP-NOI-1	SU
CUP Expansion	S	LRDP-NOI-1	SU
SMUD Component	S	LRDP-NOI-1	SU
Whole Project	S	LRDP-NOI-1	SU

SMUD = Sacramento Municipal Utility District; S = significant; SU = significant and unavoidable

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that construction noise impacts would be significant because construction during non-daytime hours (when construction noise is not exempt in Sacramento) could exceed the City's quantitative noise standards. As a result, construction noise impacts were considered to be significant. Mitigation Measures LRDP-NOI-1 was applied to reduce this impact, but it would not necessarily reduce it to a less-than-significant level. Therefore, this impact was considered significant and unavoidable in the 2020 LRDP Update SEIR with implementation of Mitigation Measure LRDP-NOI-1.

CUP Expansion Project Impacts

CUP Construction and Demolition Activities

Refer to the 2020 LRDP Update SEIR for a general analysis of construction noise associated with implementation of the LRDP. As shown in 2020 LRDP Update SEIR in Table 3.11-9, typical construction activity noise levels (not including pile driving) can range from approximately 71 to 79 dBA L_{eq} at a distance of 100 feet, noting greater or lower noise levels could occur, depending on the equipment used. Note that construction for the proposed project would not require the use of pile drivers.

In general, construction noise levels fluctuate, depending on the particular type of construction, the number of pieces of construction equipment operating at a given time, and duration of equipment use. Noise levels associated with construction activities occurring during the more noise-sensitive early-morning and evening and nighttime hours are of increased concern. Project construction is anticipated to begin in May 2024, occurring 5 days a week, typically between the hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and 9:00 a.m. and 6:00 p.m. on Sundays.

Construction activities for the project would include demolition and site preparation, grading, building and roadway construction, utility installation, and paving. Because project-specific construction data, including a list of equipment proposed for use by phase, was provided by UC Davis, project-specific construction noise modeling was conducted, as described in the *Methods of*

Analysis section. Based on the provided construction data and construction noise modeling, as described above, the demolition and site preparation phases were determined to result in the loudest construction noise levels for the project. The three loudest pieces of equipment proposed for use during demolition and site preparation are a grader and two breaker hammers/hoe rams. At a reference distance of 100 feet, these three pieces of equipment were modeled to produce a noise level of approximately 81 dBA L_{eq}. This is slightly greater than the estimated combined construction noise level presented in the 2020 LRDP Update SEIR of up to 79 dBA L_{eq} at 100 feet.

Regarding construction noise impacts on nearby noise-sensitive land uses, the nearest sensitive land uses to the proposed construction site include the Language Academy of Sacramento (more than 300 feet to the south), Ronald McDonald House (approximately 715 feet to the northeast), single-family homes (approximately 940 feet to the east), and the Kiwanis Family House (approximately 1,120 feet to the southeast). In addition, the Courtyard Sacramento Midtown is approximately 855 feet northwest of the project site. Table 3.11-10, below, shows calculated construction noise levels for the demolition phase (determined to be the loudest phase) at a distance of 100 feet.

Table 3.11-10. Construction Noise Levels at 100 feet from the Reasonable Worst-Case Phase

Reasonable Worst Case Phase[a]	Three Loudest Pieces of Equipment	Combined L_{max} at 100 feet	Combined L_{eq} at 100 feet
Demolition[b]	Grader, breaker hammers (two [based on hoe ram])	88	81

Source: Federal Highway Administration 2006.

L_{max} = maximum sound level; L_{eq} = equivalent sound level

a. The three phases proposed the use of the same three loudest pieces of equipment, making them all representative of the reasonable worst-case construction noise phase.

b. Includes CUP Expansion Project building demolition and site preparation, generator building demolition and site preparation, and CUP electrical service yard.

Table 3.11-11 shows estimated noise levels from the loudest construction phase (demolition) at the nearest noise-sensitive receptors. Refer to Appendix D for construction noise modeling results for all construction phases.

Table 3.11-11. Construction Noise Levels at the Nearest Sensitive Receptors from the Reasonable Worst-Case Phase

Nearest Sensitive Receptors	Distance from the Project Phases (feet)	Combined L_{max}	Combined L_{eq}
Language Academy of Sacramento	300	78	72
Ronald McDonald House Charities	715	71	64
Courtyard Sacramento Midtown	855	69	63
Single-Family Homes	940	68	62
Kiwanis Family House	1,120	67	60

Source: Federal Highway Administration 2006.

L_{max} = maximum sound level; L_{eq} = equivalent sound level

As shown in Table 3.11-11, above, construction noise at the nearest noise-sensitive land use (the Language Academy of Sacramento) could be up to 72 dBA L_{eq} during daytime hours. At the nearest residential land uses, located farther away, noise levels would be reduced. At the Ronald McDonald House (715 feet northeast of the project site), the estimated combined noise was modeled to be 64 dBA L_{eq}. At the Courtyard Sacramento Midtown (a hotel), combined worst-case noise was modeled to be 63 dBA L_{eq}. At the nearest single-family residences (approximately 940 feet from the project site), reasonable worst-case noise was modeled to be 62 dBA L_{eq}. At the Kiwanis Family House, estimated worst-case construction noise would be approximately 60 dBA L_{eq}.

The University is exempt under the State constitution from compliance with local land use regulations, including general plans, zoning ordinances, and building codes. However, the University seeks to develop its property in a manner that minimizes potential conflicts with the land use policies and plans of local jurisdictions to the extent feasible.

The Sacramento Campus is in the city of Sacramento. It is appropriate for the University to utilize the local regulations related to noise. As described in the Section 3.11.2, *Regulatory Setting*, of the 2020 LRDP Update SEIR, construction noise between the daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday is exempt from the numerical standards for noise in the city of Sacramento, provided that the operation of an internal-combustion engine is equipped with suitable exhaust and intake silencers in good working order. Therefore, as was the case in the 2020 LRDP Update SEIR, construction noise impacts from the project during daytime exempt hours would be less than significant. Daytime construction noise impacts would be the same as disclosed in the 2020 LRDP Update SEIR (impacts were determined to be less than significant for daytime hours).

Although project construction would generally occur during the daytime hours described above, there could be instances when construction activities would need to occur outside of these hours. During these hours, noise from construction in the city of Sacramento is generally limited to the allowable noise levels in the exterior noise standards contained in the City of Sacramento Municipal Code. Specifically, for activities occurring outside of the exempt hours, construction noise is limited to 55 dBA L_{eq} between 6:00 p.m. and 10:00 p.m. and 50 dBA L_{eq} between 10:00 p.m. and 7:00 a.m.

It is not known at this time which construction activities would occur outside of the daytime exempt hours. However, activities that require road closures as well as concrete pours are often required to occur during nighttime or early-morning hours because of access issues and the nature of setting concrete (which can prematurely cure if the weather conditions are inadequate). The 2020 LRDP Update analyzed potential nighttime noise impacts and estimated combined noise levels for early-morning concrete pours. Based on this analysis, combined noise from two concrete mixing trucks and a concrete pump truck at a distance of 50 feet could result in a noise level of 85 dBA L_{max} and 79 dBA L_{eq}. Table 3.11-15 from the 2020 LRDP Update shows that noise levels as far away as 600 feet would be 63 dBA L_{max} and 58 dBA L_{eq}, resulting in an exceedance of the 50 dBA L_{eq} threshold should this work occur outside of daytime exempt hours. If more intensive construction activities, such as those that typically occur during daytime hours, were to take place earlier than 7:00 a.m. on weekdays and Saturdays, earlier than 9:00 a.m. on Sundays, or after 6:00 p.m. any day, noise levels may be greater than the cited levels. For example, if demolition activities (evaluated above) were required to occur outside of the daytime exempt hours, combined noise levels could be 10 to 22 dB above the allowable exterior noise level of 50 dBA L_{eq}.[1]

[1] Estimated noise levels would be 5 to 17 dB higher than the applicable daytime exterior noise threshold (55 dBA L_{eq} between 7:00 a.m. and 10:00 p.m.) if they were to occur between the hours of 6:00 p.m. and 10:00 p.m.

Should the project require construction to take place outside of the daytime exempt hours for construction in the city of Sacramento, noise-sensitive land uses may be exposed to noise levels in excess of the 55 dBA standard during the hours of 7:00 a.m. to 10:00 p.m. as well as the 50 dBA standard during the hours of 10:00 p.m. to 7:00 a.m. Although construction would be temporary and often limited to daytime hours, construction that takes place during non-daytime hours may result in a significant noise impact on nearby noise-sensitive land uses. Construction noise impacts from the proposed project would be considered significant, and mitigation would be required.

Implementation of Mitigation Measure LRDP-NOI-1 would reduce the exposure to construction noise for noise-sensitive land uses and therefore reduce the severity of construction noise impacts. However, development of the project may not be able to reduce construction noise enough to eliminate the potential for impacts to occur. Therefore, construction noise impacts from construction and demolition of the CUP Annex would be ***significant and unavoidable***.

SMUD Component Construction Activities

The proposed project would reduce dependency on gas and steam turbines for primary energy production and transition to electrical power supplied by the Sacramento Municipal Utility District (SMUD). To accommodate the electrical needs of the campus, SMUD is proposing the construction of new infrastructure for a 116/21.9-kilovolt (kV) 40-megavolt-ampere (MVA) transformer and installation of a 40 MVA transmission line underground between SMUD's East City Substation and the new electrical service yard at the CUP. It is anticipated that construction for the SMUD Component would occur over a 2-year period between 2025 and 2029. This new service would be derived from SMUD's East City Substation and delivered to the UC Davis Health campus from one of two potential routes. These routes are shown in Figures 2-6a and 2-6b.

The first proposed route for the SMUD Component would follow 65th Street to Broadway, then continue west along Broadway before heading north on 59th Street to the proposed electrical service yard at the CUP. The second proposed route for the SMUD Component would follow 65th Street to T Street, then continue west along T Street and south at 57th Street. It would then continue west along 2nd Avenue to the proposed electrical service yard at the CUP. Both route options are within 20 feet of nearby noise-sensitive land uses (i.e., single-family homes).

At this time, construction phasing and equipment information is not available. However, it is reasonable to assume that demolition of the public right-of-way and the excavation required to install new transmission lines would result in the loudest noise levels. Unlike project site demolition, it is unlikely that several breaker hammers would be used at once within the public right-of-way. Demolition noise, as evaluated in the 2020 LRDP Update SEIR in Table 3.11-14, is used as a reasonably proxy for roadway demolition noise affiliated with the SMUD Component. As shown in the 2020 LRDP Update SEIR in Table 3.11-14, demolition activities involving a tractor, a concrete saw, and an excavator in proximity to one another could result in a combined noise level of 79 dBA L_{eq} at a distance of 100 feet. At a distance of 20 feet, worst-case noise levels from this activity would be approximately 93 dBA L_{eq}. Should construction be required at closer distances, construction noise would be even louder. Note that most construction activities for the SMUD Component would not be as loud as demolition. In addition, construction would move linearly along the alignment and would not take place at one location for the entire duration of construction. Construction noise from this work would therefore be relatively short term because it would take place for only a matter of days at a given nearby sensitive use. As construction activities move along the alignment and farther

from sensitive uses, noise levels at a given receiver would be reduced. However, noise levels at some residences would still be elevated compared to existing conditions.

It is anticipated that much of the construction work for the SMUD Component would take place during the exempt daytime hours of 7:00 a.m. to 6:00 p.m. Monday through Saturday and 9:00 a.m. to 6:00 p.m. on Sundays. However, if the SMUD Component requires construction outside of these hours (e.g., if certain road closures are needed that cannot take place during the day), construction noise would be limited by the exterior noise standards for Sacramento of 55 dBA L_{eq} from 6:00 p.m. to 10:00 p.m. and 50 dBA L_{eq} between the hours of 10:00 p.m. and 7:00 a.m. Because the worst-case noise levels from SMUD Component construction would exceed these noise limits, and because it is currently unknown if construction activities would be required outside of the daytime exempt hours, construction noise impacts from the SMUD Component would be considered significant, and mitigation would be required.

Implementation of Mitigation Measure LRDP-NOI-1 would reduce the exposure to construction noise for noise-sensitive land uses and therefore would reduce the severity of construction noise impacts from the SMUD Component. However, development of the SMUD Component may not be able to reduce construction noise enough to eliminate the potential for impacts to occur, and certain components of this mitigation measure (i.e., sound walls or blankets) may be infeasible to implement given the in-road work required. Therefore, construction noise impacts related to the SMUD Component would be ***significant and unavoidable.***

Construction Haul-Truck Noise

The proposed project, including the project-related use of haul trucks, was included in the development evaluated in the 2020 LRDP Update SEIR analysis. Refer to the 2020 LRDP Update SEIR for an analysis of haul-truck noise, which included an evaluation of noise from up to 176 one-way trips per day involving haul trucks entering or existing the campus during LRDP construction. Project haul trucks would make up a fraction of the estimated worst-case daily haul-truck volumes analyzed in the 2020 LRDP Update SEIR and would not increase maximum worst-case daily truck volumes compared to the previous analysis. As shown in the 2020 LRDP Update SEIR in Table 3.11-16, construction haul-truck trips on a peak day of development under the 2020 LRDP would not be expected to result in an increase in noise greater than 3 dB (considered barely audible) along any roadway segment in the campus vicinity. Because the project would not increase the maximum number of daily haul-truck trips compared to the number in the evaluation included in the 2020 LRDP Update SEIR, and because haul-truck impacts from overall development under the LRDP on a worst-case day (i.e., most hauling-intensive day) would be less than significant, noise from project construction—specifically, haul-truck activity—would also be ***less than significant.***

Construction Noise Summary

Noise impacts from project site construction activities as well as SMUD Component construction activities would both be significant and unavoidable with mitigation. No new or substantially more severe impacts related to construction noise would occur with the project compared to the 2020 LRDP Update SEIR. Construction noise impacts associated with the project would be s***ignificant and unavoidable.*** The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-NOI-1: Implementation of Measures to Reduce Construction Noise

For construction activities associated with future projects under the 2020 LRDP Update, UC Davis will implement or incorporate the following noise reduction measures into construction specifications for the contractor(s) to implement during project construction:

1. Construction activities will be limited to daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday, when feasible.
2. Pile driving will not occur outside of the daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday.
3. All construction equipment used for future projects will be equipped with suitable exhaust and intake silencers in good working order. All construction equipment will be properly maintained and equipped with intake silencers and exhaust mufflers and/or engine shrouds, in accordance with manufacturer recommendations. Equipment engine shrouds, if used, will be closed during equipment operation.
4. All construction equipment and equipment staging areas will be located as far as possible from nearby noise-sensitive land uses, and/or located such that existing or constructed noise attenuating features (e.g., temporary noise wall or blankets) block the line of sight between affected noise-sensitive land uses and construction staging areas, to the extent feasible.
5. Individual operations and techniques will be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete offsite instead of onsite), where feasible and consistent with building codes and other applicable laws and regulations.
6. Stationary noise sources such as generators or pumps will be located as far as feasible from noise-sensitive land uses.
7. No less than 1 week prior to the start of construction activities at a particular location, notification will be provided to academic, administrative, and residential or noise-sensitive uses (such as schools) located within 500 feet of the construction site.
8. For any construction activity that must extend beyond the daytime hours of 7:00 a.m. and 6:00 p.m. on weekdays and Saturdays, and between 9:00 a.m. and 6:00 p.m. on Sundays, the construction contractor for that project will ensure that noise levels at the nearest noise-sensitive land use do not exceed 55 dBA during the hours of 7:00 a.m. to 10:00 p.m. and 50 dBA during the hours of 10:00 p.m. to 7:00 a.m., as feasible. In addition to measures described above, the following measures may also help achieve this performance standard:
    a. Install temporary noise barriers as close as possible to the noise source or the receptor within the direct line-of-sight path between the noise source and nearby sensitive receptor(s). The barrier should be constructed of material that has a surface weight of at least 1 pound per square foot and has an acoustical rating of at least 25 STC, or Sound Transmission Class. This can include a temporary barrier constructed with plywood support on a wood frame, sound curtains supported on a frame, or other comparable material.
    b. Use “quiet” gasoline-powered compressors or electrically powered compressors as well as electric rather than gasoline- or diesel-powered forklifts for small lifting, where feasible.

c. Prohibit idling of inactive construction equipment for prolonged periods (i.e., more than 2 minutes).

d. Retain a qualified noise specialist to conduct noise monitoring and ensure that noise reduction measures achieve the necessary reductions so that levels at the receiving land uses do not exceed 55 dBA during the hours of 7:00 a.m. to 10:00 p.m. and 50 dBA during the hours of 10:00 p.m. to 7:00 a.m.

Impact NOI-2: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from operations in excess of applicable standards

Summary of Impact NOI-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	—
CUP Expansion	S	LRDP NOI-2a	LTS
SMUD Component	LTS	None	—
Whole project	S	LRDP NOI-2a	LTS

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that operational noise sources resulting from implementation of the 2020 LRDP Update could result in noise levels in excess of the City of Sacramento limits (which UC Davis has elected to adopt). As a result, operational noise impacts were determined to be significant, and mitigation was required. With implementation of Mitigation Measures LRDP-NOI-2a and LRDP-NOI-2b, impacts from generator testing and from future mechanical equipment associated with development under the LRDP were determined to be less than significant with mitigation. The 2020 LRDP Update SEIR also determined that impacts related to project traffic noise would be less than significant, with a no more than 0.7 dB increase resulting from project implementation on any analyzed segment.

CUP Expansion Project Impacts

Emergency Generators

The California Hospital Tower Project EIR evaluated the addition of three emergency generators to the CUP Annex, but the precise location was not known at that time. It was estimated that the CUP Annex would be at least 750 feet from the Ronald McDonald House and 400 feet from the Language Academy of Sacramento. Based on the current project design for the CUP Annex, the generators would be more than 975 feet from the Ronald McDonald House and more than 375 feet from the Language Academy of Sacramento. The generator analysis provided in the California Hospital Tower Project EIR can be extrapolated to estimate noise at these updated distances.

At the nearby Language Academy of Sacramento, generator noise during testing was estimated, in the California Hospital Tower Project EIR, to be approximately 82 dBA at a distance of 400 feet (Cummins 2017), without accounting for attenuation from the building in which the generator would be located. Generator noise would be reduced by an estimated 72 dBA at that distance when

considering an estimated 10 dB of noise reduction from the walls of the annex. At 375 feet, the updated closest distance between the generators and the nearby school, the noise level would be an estimated 72.6 dBA L_{eq}, based on the factors described above.

At the nearby Ronald McDonald House, generator noise was estimated, in the California Hospital Tower Project EIR, to be approximately 77 dBA at 750 feet, without accounting for attenuation. When considering an estimated 10 dB of reduction from the walls of the annex, generator noise was estimated to be 67 dBA. At 975 feet, the updated closest distance between the generators and the nearby school, the noise level would be an estimated 64.7 dBA L_{eq}, based on the factors described above.

As described in the California Hospital Tower EIR, although noise would be reduced at a rate of 6 dB per doubling of distance, noise from generator testing would exceed the City's exterior noise standard of 55 dBA during daytime hours at the nearest receptors as well as receptors located even farther away. Additional attenuating features, such as a weather enclosures and/or exhaust silencers or filters, could also reduce noise from generator operations, but specific attenuating features have not been selected at this time. Therefore, noise from the testing of project generators at the CUP could result in noise levels in excess of City standards at nearby noise-sensitive land uses.

As described previously, testing for emergency generators installed as a part of the project would be temporary and intermittent, occurring for only a period of 30 minutes approximately once per month. However, because noise from the testing would be expected to exceed the quantitative criteria of the City, impacts are considered to be significant, and mitigation is required.

Implementation of Mitigation Measure LRDP-NOI-2a would require emergency generators to be oriented, located, and designed so as to reduce noise exposure during testing to below the applicable City criteria. Therefore, with implementation of mitigation, noise from emergency generator testing would be in compliance with acceptable noise standards for sensitive receptors. This impact would be **less than significant with mitigation**. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mechanical Equipment Noise

In addition to the aforementioned emergency generators, the proposed project would result in the installation of four new gas-fired condensing boilers in the new CUP Annex (Ramirez pers. comm.) and two 40 MVA oil-filled power transformers in the proposed electrical yard.

The existing CUP has several pieces of currently operational noise-generating mechanical equipment, consisting of five diesel emergency generators, several steam boilers and hot-water boilers, one gas turbine, a number of pumps, and several induced-draft cooling towers. In general, cooling towers (typically 100-horsepower, propeller-driven cooling towers) can generate a noise level of approximately 74 dBA at 50 feet. A typical boiler generates a sound power level in the range of 96 to 99 dBA,[2] which equates to a noise level of 64 to 67 dBA at 50 feet. Pumps generate noise levels at 50 feet of approximately 81 dBA.[3] The existing CUP is an enclosed building, and equipment noise is largely attenuated by the building walls, as demonstrated by the 2010 LRDP noise measurements in Table 3.11-7. Specifically, as shown in Table 3.11-11, most measurements taken near the plant in

[2] Ibid.

[3] Federal Highway Administration. 2006. *Roadway Construction Noise Model User Guide.*

2010 were between 54 and 59 dBA L_{eq}, demonstrating that noise from equipment within the building is greatly reduced by the building.

The four new boilers would be located inside the CUP Annex. Noise from this equipment would be substantially reduced by the walls of the CUP Annex. As described above, a typical boiler generates a sound power level in the range of 64 to 67 dBA at 50 feet. Four boilers operating simultaneously would result in a noise level 6 dB greater than the noise level from a single boiler, resulting in a combined noise level of up to approximately 73 dBA L_{eq} at 50 feet. Noise from boilers and equipment in the CUP Annex would be reduced by the walls, as is the case for equipment within the CUP. However, because design details of the CUP Annex structure and equipment (including the sound transmission class of the building materials and makes and models of the boilers) are not yet known, it is not possible to confirm equipment noise levels at the exterior of the CUP Annex. It can conservatively be assumed that noise would be reduced by at least 10 dB, resulting in a worst-case noise level of 63 dBA at 50 feet for all four boilers.

The nearest noise-sensitive land use to the CUP Annex and associated boilers is the Language Academy of Sacramento, located more than 400 feet south of the nearest possible boiler location. At a distance of 400 feet, noise from the four boilers would be reduced by approximately 18 dB to 45 dBA L_{eq}, based on distance alone. This would be below the applicable 50 and 55 dBA thresholds for operational equipment in Sacramento during nighttime and daytime hours, respectively (noting that the school is not operational during nighttime hours). Additional noise reduction would be provided by the shielding from intervening structures, including existing structures and under construction Parking Structure 6, which would be located between the CUP Annex and the Language Academy of Sacramento. Because of this additional shielding, and because the annex itself would very likely provide more than the assumed 10 dB of reduction, noise impacts from operation of the project boilers at the nearest sensitive land use would be less than significant. Noise levels would be even lower at the nearest residences, the hotel, and the nearby Ronald McDonald House and would not exceed the applicable noise thresholds for stationary equipment in Sacramento. Noise impacts from the addition of four boilers at the CUP Annex would be ***less than significant***. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

In addition to the equipment in the CUP Annex, the switchyard would include a new 40 MVA transformer. The edge of the equipment yard would be more than 350 feet from the nearby Language Academy of Sacramento and more than 700 feet from the nearby Ronald McDonald House. The nearest residential property lines are more than 900 feet to the east.

In order not to exceed applicable City thresholds, noise levels from mechanical equipment must not be greater than 50 dBA L_{eq} at nearby noise-sensitive receptors during nighttime hours or 55 dBA L_{eq} at noise-sensitive receptors during daytime hours.

Although the make and model for the proposed transformers are not yet final, noise from transformers can be estimated, based on the MVA rating of the transformer.[4] Based on an estimated noise level of 65 dBA[5] at 50 feet for a 40 MVA transformer, noise from such equipment would be

[4] Calculation algorithm from *Industrial Noise Control and Acoustics* by Randall F. Barron. Chapter 5, Section 5.6, Transformer Noise (Sound Power [Lw] = 48+12.5log[kVA])

[5] Calculation based on algorithm from *Industrial Noise Control and Acoustics* by Randall F. Barron. Chapter 5, Section 5.6, Transformer Noise (Sound Power [Lw] = 48+12.5log[kVA])

approximately 48 dBA L_{eq}[6] at a distance of 350 feet (the distance to the Language Academy of Sacramento), 42 dBA L_{eq} at 700 feet (the distance to Ronald McDonald House), and 40 dBA at 900 feet (the distance to the nearby single-family residences). Note that the noise level would be reduced to 42 dBA L_{eq} at the nearest residential structure, located approximately 900 feet away, based on distance alone. Further noise reduction would be achieved by shielding from intervening buildings and walls or fences installed around the electrical service yard. However, even without accounting for that attenuation, noise levels would be below the allowable 50 and 55 dBA thresholds during nighttime and daytime hours, respectively, at nearby noise-sensitive land uses. Noise impacts from the transformer in the electrical service yard would be ***less than significant,*** and no mitigation would be required. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Traffic Noise

Implementation of the proposed project would result in no changes to the traffic volumes analyzed in the 2020 LRDP Update SEIR. As was the case in the 2020 LRDP Update SEIR, traffic noise impacts would be less than significant. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-NOI-2a: Reduce Noise Exposure from Emergency Generators

Prior to approval of a building permit for individual LRDP development projects proposing the installation of emergency generators, documentation will be submitted to the University demonstrating with reasonable certainty that noise from testing of the proposed generators will not exceed 55 dBA at the nearest residential land use. Acoustical treatments to reduce noise from generator testing may include, but are not limited to, the following.

- Enclosing generators.
- Incorporating the use of exhaust mufflers or silencers to reduce exhaust noise.
- Selecting a relatively quiet generator model.
- Orienting or shielding generators to protect noise-sensitive receptors to the greatest extent feasible.
- Increasing the distance between generators and noise-sensitive receptors. and
- Placing barriers or enclosures around generators to facilitate the attenuation of noise.

In addition, all project generators will be tested only between the hours of 7:00 a.m. and 10:00 p.m. The University will ensure that all recommendations from the acoustical analysis necessary to ensure that generator noise will meet the above requirements will be incorporated into the building design and operations.

[6] When adding noise from multiple sources, if the difference between two noise sources is 10 dB or more, the higher noise source will dominate, and the resultant noise level will be equal to the noise level of the higher noise source.

Impact NOI-3: Generation of excessive ground-borne vibration or ground-borne noise levels

Summary of Impact NOI-3 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	S	NOI-3a, NOI-3b	LTS
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

Annoyance- and damage- related vibration impacts from construction were evaluated in the 2020 LRDP Update SEIR. As described in the SEIR, vibration resulting from LRDP construction would have the potential to result in annoyance effects on onsite and offsite uses, even though offsite uses would all be at least 50 feet or more from onsite construction areas. It was conservatively assumed that annoyance-related vibration impacts on onsite and offsite land uses would be significant, and mitigation would be required. With implementation of Mitigation Measure LRDP-NOI-3a, this impact would be reduced to a less-than-significant level. Regarding damage-related impacts, the SEIR stated that vibration-generating construction could occur close enough to on-campus buildings to result in potential damage-related effects. Damage-related vibration impacts were determined to be significant, and mitigation was required. With implementation of Mitigation Measure LRDP-NOI-3b, damage-related vibration impacts on campus structures would be reduced to less than significant. Vibration impacts related to both annoyance and vibration were determined to be less than significant with mitigation in the 2020 LRDP Update SEIR.

CUP Expansion Project Impacts

Vibration-Related Annoyance

CUP Construction and Demolition Activities

Although most project construction activities would occur between the hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sundays, the project may require some construction activities to take place outside of these standard daytime hours. People are generally considered more sensitive to noise during nighttime hours (i.e., hours when many people sleep). Certain land uses are considered sensitive to vibration during daytime hours as well. Refer to Table 3.11-1, Federal Transit Administration Ground-borne Vibration Impact Criteria, for the vibration annoyance criteria by land use type.

The nearest land uses to the project site are on-campus facilities buildings, including the Facility Support Services Building (FSSB) and the existing CUP. These would not be considered sensitive to vibration-related annoyance effects. In addition, there are some on- and off-campus Category 1 land uses (i.e., buildings where vibration would interfere with interior operations), including some on-campus hospital buildings and the off-campus Language Academy of Sacramento. Off-campus Category 2 land uses (i.e., residences and buildings where people normally sleep) are located farther

away, at distances of approximately 940 feet from project construction areas for single-family residences and 715 feet from project construction areas for the nearby Ronald McDonald House.

The nearest Category 1 land use to project construction would be the Language Academy of Sacramento, located more than 300 feet from project construction activities. This land use would have an applicable vibration-related annoyance criterion of 65 VdB. The most vibration-intensive piece of equipment proposed for project construction would be a vibratory roller. At a distance of 300 feet, a vibratory roller would generate a vibration level of 62 VdB. This level would be below the applicable 65 VdB criterion for this land use. In addition, most construction would occur even farther than 300 feet from this use. In addition, most equipment generates lower levels of vibration than a vibratory roller Therefore, vibration-related annoyance impacts at the Language Academy of Sacramento would be less than significant.

With regard to the nearby residential land uses (Category 2 land uses), annoyance-related vibration effects on Category 2 land uses are typically a concern if vibration levels exceed the 72 VdB standard during nighttime hours when people typically sleep. Should construction activities need to take place during nighttime hours, equipment would be operating approximately 715 feet from the nearest Category 2 land use (the Ronald McDonald House); the nearest single-family homes would be more than 940 feet from project construction activities. The Courtyard Sacramento Midtown is approximately 855 feet from project construction areas. Refer to Table 3.11-12, below, for vibration levels at various distances from project construction equipment.

As shown in Table 3.11-12, vibration levels at a distance of 715 feet from the most vibration-intensive equipment proposed for project construction (i.e., a vibratory roller) would be approximately 50 VdB. At 855 feet and 940 feet, this vibration level would be reduced to 48 VdB and 47 VdB, respectively. These levels would be below the applicable 72 VdB criterion for Category 2 land uses. In addition, most construction would occur even farther away from residential land uses, and most equipment generates lower levels of vibration than a vibratory roller. It is likely that the use of a vibratory roller would be limited to daytime hours. Nevertheless, the quantitative estimated vibration levels from equipment operation would be below the applicable vibration criterion for Category 2 land uses. Vibration impacts on Category 2 land uses would be less than significant.

Table 3.11-12. Vibration Levels in VdB of Project Construction Equipment

Equipment	VdB at 20 feet	VdB at 50 feet	VdB at 78 feet	VdB at 300 feet	VdB at 715 feet	VdB at 855 feet	VdB at 940 feet
Vibratory roller	97	85	79	62	50	48	47
Large bulldozer	90	78	72	55	43	41	40
Caisson drilling	90	78	72	55	43	41	40
Loaded trucks	90	77	71	54	42	40	39
Jackhammer	82	70	64	47	35	33	32
Small bulldozer	61	49	43	26	14	12	11

VdB = vibration decibels.

Because vibration from project construction associated with the CUP would not be expected to exceed the FTA annoyance criteria at nearby sensitive uses, vibration-related annoyance impacts from project construction would be ***less than significant.***

SMUD Component Construction Activities

Vibration-generating construction activities for the SMUD Component may occur as close as an estimated 20 feet, or closer, from offsite structures when in-street work occurs. Construction activities for this component that take place on the Sacramento campus (i.e., the new electrical service yard at the CUP) would be much further from nearby land uses that would be sensitive to vibration-related annoyance (i.e., places where people generally sleep); as a result, this evaluation focuses on potential vibration effects from the installation of the proposed 40 MVA transmission line underground between SMUD's East City Substation and the new electrical service yard at the CUP.

In-street SMUD Component construction may occur in proximity to offsite residential (Category 2) land uses. As described above, annoyance-related vibration effects on Category 2 land uses are generally a concern if vibration levels in excess of the 72 VdB standard during nighttime hours when people typically sleep. The majority of construction for the SMUD Component is expected to occur during daytime hours. However, should construction activities need to take place during nighttime hours, equipment could be operating close enough to nearby Category 2 land uses to result in excessive vibration. It is expected that the most vibration-intensive construction equipment used during nighttime hours would be larger earth-moving equipment similar to a large-bulldozer (shown in Table 3.11-12 above). However, it is conservatively assumed that a vibratory roller may also be used during nighttime hours. The estimated vibration levels in VdB for a vibratory roller and a large bulldozer at various distances from construction equipment is shown in Table 3.11-12 above. As shown in this table, a vibratory roller and a large bulldozer could result in vibration levels of 97 VdB and 90 VdB at a distance of 20 feet, respectively. These vibration levels exceed the 72 VdB FTA criterion for Category 2 land uses. Note that nighttime in-street work would be temporary and intermittent and would move linearly along the alignment. Work would not occur for long periods of time in the exact same location, and in close proximity to the exact same sensitive uses. However, because vibration levels would likely exceed the quantitative criterion for vibration-related annoyance, vibration-related annoyance impacts during nighttime hours to offsite Category 2 land uses from in-street construction work for the SMUD Component would be considered significant, and mitigation would be required.

Implementation of Mitigation Measure NOI-3a would require buffer distances between certain vibration-generating construction equipment used during nighttime hours and the nearest sensitive land uses where people sleep. When nighttime construction activities are necessary in close proximity to residences, only smaller equipment that results in lower vibration levels would be permitted for use. If larger equipment is required for a particular construction effort, that activity would be required to be conducted during daytime hours. This impact would be ***less than significant with mitigation*** for the in street work associated with the SMUD Component.

Mitigation Measures

Mitigation Measure NOI-3a: Limit Nighttime Vibration-Generating Construction Activities for In-Street SMUD Work

For in-street construction activities under the SMUD Component that take place during nighttime hours, the following buffer distances shall be maintained between vibration-generating equipment and the nearest offsite sensitive use where people may sleep:

- Vibratory Roller: 140 feet

- Large bulldozer: 78 feet
- Small bulldozer: 10 feet

Specifically, a vibratory roller and a large bulldozer shall not be used within 140 feet and 78 feet, respectively, of land uses where people sleep during nighttime hours. As a result of these buffer distances, the use of a large bulldozer and vibratory roller likely would not be permitted during nighttime hours along roadway segments developed with residential land uses. Any construction work requiring this equipment would be limited to daytime hours within these distances of residences.

Vibration-Related Annoyance Summary

The on-campus components of the project (i.e., CUP construction and on-campus SMUD Component construction) would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR. The in-street SMUD Component work would result in potentially significant vibration-related annoyance impacts which would be reduced to less than significant levels with project-specific mitigation. Therefore, no new or more severe vibration-related annoyance impacts would occur than those disclosed in the 2020 LRDP Update SEIR with the implementation of project-specific mitigation for the in-street portion of the SMUD Component.

Vibration-Related Structural Damage

*CUP **Construction and Demolition Activities***

Vibration from construction can result in damage to adjacent structures if the construction activity is particularly vibration intensive or located particularly close to structures that are susceptible to vibration-related damage. Refer to Table 3.11-13, below, for estimated PPV vibration levels from project equipment at 25 feet as well as other distances.

Table 3.11-13. Peak Particle Velocity Vibration Levels for Construction Equipment

Equipment	PPV at 13 Feet	PPV at 20 Feet	PPV at 25 Feet	PPV at 50 Feet	PPV at 75 Feet	PPV at 100 Feet
Vibratory roller	0.56	0.29	0.21	0.08	0.04	0.03
Hoe ram	0.24	0.12	0.09	0.03	0.02	0.01
Drill	0.24	0.12	0.09	0.03	0.02	0.01
Large bulldozer	0.24	0.12	0.09	0.03	0.02	0.01
Loaded trucks	0.20	0.11	0.08	0.03	0.02	0.01
Jackhammer	0.09	0.05	0.04	0.01	0.04	0.00
Small bulldozer	0.01	0.00	0.00	0.00	0.00	0.00

Source: Federal Transit Administration 2018.
PPV = peak particle velocity.

Vibration effects on offsite uses are evaluated to determine if vibration-related damage impacts would occur from project construction. Construction would occur at least 300 feet from all buildings associated with the Language Academy of Sacramento, approximately 940 feet from the nearest single-family residences, and 715 feet from the nearby Ronald McDonald House. The criterion for historic and some old buildings (i.e., PPV of 0.25 inch per second [in/sec]) is conservatively applied to the school buildings associated with the Language Academy of Sacramento. Older residential structures have an applicable Caltrans vibration criterion for damage (i.e., PPV of 0.3 in/sec). This

criterion is conservatively applied to the nearest single-family homes and the Ronald McDonald House. As shown in Table 3.11-13, above, vibration from project equipment would be below both the 0.25 and 0.3 in/sec criteria at a distance of 25 feet (and less); at greater distances (such as the distance to the offsite sensitive land uses), vibration levels would be even lower. Therefore, vibration from project construction would not exceed the applicable damage criteria at the nearest offsite structures. Vibration-related damage impacts on offsite land uses would be ***less than significant***.

SMUD Component Construction Activities

Vibration-generating construction activities associated with the SMUD Component may occur within an estimated 20 feet of offsite structures when in-street work occurs. Construction activities for this component that take place on the Sacramento Campus (e.g., construction of the new electrical service yard at the CUP) would be much farther from nearby structures. For this reason, the vibration-related damage evaluation focuses on potential vibration effects from installation of the proposed 40 MVA underground transmission line between SMUD's East City Substation and the new electrical service yard at the CUP.

Although the exact characteristics of the buildings that would be located near construction of the SMUD Component are not known at this time, it is conservatively assumed that some structures near the proposed in-street work could be categorized as "historic and some old buildings" or "older residential structures." The criteria for "historic and some old buildings" and "older residential structures" are a PPV of 0.25 in/sec and 0.3 in/sec, respectively.

The most vibration-intensive equipment that may be used for in-street work associated with the SMUD Component are a vibratory roller and a large bulldozer. As shown in Table 3.11-13, the construction equipment proposed for use on the SMUD Component would create vibration levels that would be below the damage criterion for historic and some old buildings (i.e., PPV of 0.25 in/sec) at a distance of 25 feet and older residential homes (i.e., PPV of 0.3 in/sec) at a distance of 20 feet. A large bulldozer would result in vibration levels that would below both criteria at a distance of 13 feet.

Should construction with certain types of equipment take place in proximity to vibration-sensitive structures, vibration from construction equipment may exceed the applicable damage criteria for that structure. As a result, vibration-related impacts from in-street work associated with construction of the SMUD Component are conservatively considered to be significant, and mitigation would be required.

Implementation of Mitigation Measure NOI-3b would require vibration levels generated by in-street construction associated with the SMUD Component to be below applicable criteria at nearby sensitive structures (e.g., by establishing buffers between certain vibration-generating construction equipment and the nearest sensitive structures). Different buffer distances are required for "historic and some old buildings" and "older residential structures." When construction activities would be required in proximity to residences, only smaller types of equipment that generate lower vibration levels would be permitted for use. As described in Mitigation Measure NOI-3b, tailored buffer distances can be determined once the final equipment types for in-street construction associated with the SMUD Component have been selected. However, the maximum vibration levels outlined in the mitigation measure must not be exceeded at adjacent sensitive structures. Implementation of Mitigation Measure NOI-3b would reduce

potential vibration-related damage impacts to less-than-significant levels. This impact would be ***less than significant with mitigation***.

Mitigation Measures

Mitigation Measure NOI-3b: Equipment Buffer Distances to Nearby Vibration-Sensitive Structures

For in-street construction associated with the SMUD Component, vibration levels at the nearest offsite sensitive structures similar to "historic and some old buildings" shall be limited to a PPV of 0.25 in/sec, or less. Vibration levels at the nearest "older residential structure" shall be limited to a PPV of 0.3 in/sec, or less. To ensure these vibration levels are not exceeded, the following buffer distances shall be maintained between vibration-generating equipment and the nearest off-\site sensitive structures similar to "historic and some old buildings" (i.e., with a vibration-related damage criterion of 0.25 in/sec):

- Vibratory roller: 23 feet
- Large bulldozer (or similar, such as an excavator): 13 feet
- Small bulldozer: 2 feet

In addition, the following buffer distances shall be maintained between vibration-generating equipment and the nearest offsite sensitive structures similar to "older residential structures" (i.e., with a vibration-related damage criterion of 0.3 in/sec):

- Vibratory roller: 20 feet
- Large bulldozer (or similar, such as an excavator): 12 feet
- Small bulldozer: 2 feet

Once the final equipment for the in-street construction associated with the SMUD Component has been selected, tailored buffer distances, based on the size and type of equipment proposed for use (as well as the damage criteria described above), may be determined and used in lieu of the aforementioned buffer distances.

Vibration-Related Structural Damage Summary

The on-campus components of the project (i.e., CUP construction and on-campus construction of the SMUD Component) would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR. The in-street SMUD Component work that would take place when installing the new SMUD feeder from the East City Substation would result in potentially significant vibration-related damage impacts, which would be reduced to less-than-significant levels with project-specific mitigation. Therefore, this impact would be ***less than significant with project-specific mitigation.*** With implementation of project-specific mitigation, no new or more severe vibration-related damage impacts would occur than those disclosed in the 2020 LRDP Update SEIR.

Impact NOI-4: Placement of project-related activities in the vicinity of a private airstrip or an airport land use plan or within 2 miles of a public airport or public use airport, resulting in exposure of people residing or working in the project area to excessive noise levels

Summary of Impact NOI-4 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	LTS	None	—
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

According to the 2020 LRDP Update SEIR, there are no public or public use airport facilities in the vicinity of the Sacramento Campus, and there would be no noise impacts related to aircraft activity at public airports. There are also no private airstrips within 2 miles of the campus. Helicopter noise from the on-campus emergency helipad was evaluated in the 2020 LRDP Update SEIR. Because of the potential for an increase in emergency helicopter activity, this impact was considered significant. Because there was no feasible mitigation to reduce this impact to a less-than-significant level, this impact was considered to be significant and unavoidable.

CUP Expansion Project Impacts

The CUP Expansion Project would not result in an increase in helicopter activity at the Sacramento Campus, in excess of what was previously evaluated. The analysis presented related to public airports and private airstrips in the 2020 LRDP Update SEIR has not changed since publication of that document. No new or substantially more severe impacts would occur related to aircraft noise as a result of project implementation, and no mitigation would be required. This impact would be ***less than significant.*** The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

3.12 Population and Housing

This section describes the regulatory and environmental setting for population and housing in the area of the Central Utility Plant (CUP) Expansion Project, analyzes effects on population and housing that would result from implementation of the CUP Expansion Project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable. No comments specific to population and housing were received during the notice of preparation (NOP) comment period.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the 2020 Long-Range Development Plan Update Supplemental Environmental Impact Report (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.12.1 Existing Conditions

Regulatory Setting

Section 3.12.1 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for population and housing. There have been no changes to the regulatory setting since the 2020 LRDP Update.

Environmental Setting

Section 3.12.1 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the environmental setting for population and housing. There are no residences within the area of the CUP Expansion Project, which contains the existing CUP site, the Facility Support Services Building (FSSB), Parking Structure 6, and a small vegetated area adjacent to the major campus open space. At the time of the 2020 LRDP Update, the growth projections from the Sacramento Area Council of Governments (SACOG) 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) were used. The six-county Sacramento metropolitan area, consisting of Sacramento, Yolo, Sutter, Yuba, El Dorado, and Placer Counties, had a population of 2,376,311 in 2016; it is expected to grow to 2,996,832 by 2040, an increase of approximately 26 percent (Sacramento Area Council of Governments 2019). The 2025 Blueprint (i.e., SACOG's MTP/SCS) is projected to be adopted in fall 2025. Therefore, the growth projections are largely unchanged from the 2020 LRDP Update SEIR. In addition, the onsite daily population of the Sacramento Campus is also unchanged from the 2020 LRDP Update, which anticipated approximately 21,200 people by 2040.

The two proposed SMUD feeder routes both run from the Sacramento Municipal Utility District (SMUD) East City Substation, through the Elmhurst neighborhood (Figures 2-6a and 2-6b), to the CUP Expansion Project site.

3.12.2 Environmental Impacts

This section describes the environmental impacts associated with population and housing that would result from implementation of the project. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) any significant impacts are provided, if available.

Methods for Analysis

The effects of population growth are evaluated below by comparing the population growth that would be induced through implementation of the CUP Expansion Project to the existing and projected regional population.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the 2020 LRDP Update would be considered to have a significant effect on population and housing if it would result in any of the conditions listed below.

- Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure).
- Displacement of a substantial number of existing people or housing, necessitating the construction of replacement housing elsewhere.

Issues Not Evaluated Further

No housing is located on the project site, and no housing is proposed as part of the CUP Expansion Project. Implementation of the CUP Expansion Project would be accommodated within the current campus boundary and would not displace any existing housing or people, as described in Section 3.12.2 of the 2020 LRDP Update SEIR. No additional project-level analysis of this issue is required for the project.

Impacts and Mitigation Measures

Impact POP-1: Induce substantial unplanned population growth. either directly or indirectly

Summary of Impact POP-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	LTS	None	—
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that implementation of the 2020 LRDP Update would increase the daily population on the UC Davis Sacramento Campus through increased student enrollment and the addition of non-UC employees and the UC Davis Health faculty and staff; however, this would not result in a substantial increase in the population of the Sacramento region. Therefore, this impact was determined to be less than significant.

CUP Expansion Project Impacts

The CUP Expansion Project would add 12 new employees, which is considered a negligible increase compared to the daily onsite population of 21,200 anticipated on the Sacramento Campus by 2040. It is anticipated that these new employees would most likely reside throughout the surrounding Sacramento metropolitan region and would not be concentrated in any one area. The project does not include any residential uses.

The CUP Expansion Project would not indirectly result in an increase in the daily population on the Sacramento Campus. The project objectives include continuing to provide for the utility load associated with projected campus growth, which was analyzed in the 2020 LRDP Update. The project would increase the resiliency of utilities and further campus compliance with the UC Sustainable Practices Policy. The CUP Expansion Project would not induce substantial unplanned population growth, and the project impact would be **less than significant**. Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP SEIR.

Mitigation Measures

No mitigation measures would be necessary.

3.13 Public Services

This section describes the regulatory and environmental setting for public services in the area of the Central Utility Plant (CUP) Expansion Project, analyzes effects on public services that would result from implementation of the CUP Expansion Project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

In response to the notice of preparation (NOP) for this EIR, no comments specific to public services were received during the NOP comment period.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the 2020 Long-Range Development Plan Update Supplemental Environmental Impact Report (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.13.1 Existing Conditions

Regulatory Setting

Section 3.13 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for public services. The following discussion summarizes Section 3.13.1 of the 2020 LRDP Update SEIR and applicable updates since 2019.

University of California

As noted in Section 3.0.2, *University of California Autonomy*, the University of California (UC or University), as a constitutionally created State of California (State) entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the UC that are in furtherance of its educational purposes. However, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

Federal

Higher Education Opportunity Act

The Higher Education Opportunity Act requires that a Fire Safety Report be published by the University containing statistics for fire-related safety and information, including, but not limited to, the number of fires and the cause, injuries and treatments needed as a result of fires, fire-related deaths, value of property damaged, fire safety systems on campus, policies to enhance fire safety, and plans to improve fire safety.

State

Uniform Fire Code

The Uniform Fire Code, with the State amendments, contains regulations related to the construction, maintenance, and use of buildings, including access regulations. Other regulations are related to hydrants, fire sprinklers, alarm systems, material storage, and physical improvements to help first responders, including those involved with industrial processes and uses. The California Fire Code (CFC), Part 9 of Title 24 of the California Code of Regulations, contains specialized technical regulations related to fire and life safety. The CFC is revised and published every 3 years by the California Building Standards Commission.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which sets forth standards for fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, and fire suppression training.

California Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (known as Cal/OSHA) established minimum standards and guidelines for the handling of highly combustible materials. Other requirements apply to fire hose sizing, the use of compressed air, access roads, and the testing, maintenance, and use of firefighting and emergency medical equipment.

California Code of Regulations

The California Code of Regulations, Title 5, Education, governs all aspects of education in the state.

California Building Code

California Building Code (CBC), located in Part 2 of Title 24 (California Building Standards Code) of the California Code of Regulations, is based on the International Building Code (IBC). The CBC, which has been amended for California conditions, provides minimum standards for building design. Typical fire safety requirements of the CBC pertain to the installation of sprinklers in all high-rise buildings and the establishment of fire-resistance standards for fire doors, building materials, and particular types of construction.

Regional and Local

City of Sacramento General Plan

The City of Sacramento (City) 2035 General Plan Public Health and Safety Element has several goals related to response time standards for police and fire protection as well as polices related to ensuring an adequate water supply for fire protection and maintaining adequate staffing levels and facilities. The 2040 General Plan is currently in the public review phase. Policies from the Public Health and Safety Element that are applicable to the project include the following:

Policy PFS-1.1: Crime and Law Enforcement. The City shall continue to work cooperatively with the community, regional law enforcement agencies, local government agencies, and other entities to

provide quality police service that protects the long-term health, safety, and well-being of the community.

Policy PFS-1.7: Water Supply for Fire Suppression. The City shall ensure that adequate water supplies are available for fire suppression throughout the city and shall require development to construct all necessary fire suppression infrastructure and equipment.

Policy PFS-1.9: Equipment, Facilities, and Staffing. The City shall locate and maintain police and fire equipment, facilities, and staffing at locations and levels that allow for effective service delivery.

Environmental Setting

Fire Protection and Emergency Services

The Sacramento Fire Department (SFD) has a total of 24 fire stations, which are divided into three battalions. The battalions provide primary fire response, natural disaster response, hazardous materials incident response, and emergency medical service to the city and UC Davis Sacramento Campus. The project is within the response zone of Fire Station 6, which is approximately 0.75 mile southwest of the project site. The SFD staffs 24 fire engines, nine trucks, 15 advanced lifesaving ambulances, a rescue company, three swift-water rescue teams, and two hazmat response teams. suppression companies are staffed with four personnel, consisting of a captain, an engineer, and two firefighters who respond to calls for service (Sacramento Fire Department 2023).

Police Protection

UC Davis

The UC Davis Police Department provides police services for all buildings and facilities either owned or leased by the UC Davis Health System, including the CUP. It operates a substation on the UC Davis Sacramento Campus that provides all needed police services for the campus. Officers from the UC Davis Police Department respond to emergencies as well as calls for service that encompass investigating crimes and filing reports, checking out suspicious persons and vehicles, conducting traffic accident investigations, and enforcing traffic laws. The UC Davis Police Department has mutual-aid agreements with other law enforcement agencies in Sacramento County, including the city of Sacramento.

City of Sacramento

The Sacramento Police Department (SPD) provides primary police protection services in Sacramento. The most recent available data, from the department's 2016 annual report, indicate that the SPD employs 697 sworn officers and 269 civilian personnel (Sacramento Police Department 2017).

Schools

The project site is in an area served by the Sacramento City Unified School District (SCUSD). The nearest public school is Tahoe Elementary, which is south of Broadway, west of 60th Street, and along proposed Sacramento Municipal Utility District (SMUD) feeder Route 1. The Language

Academy of Sacramento is south of the Facility Support Services Building (FSSB) and west of 49th Street.

Library Services

The Sacramento Public Library has 28 branches throughout Sacramento County. The closest library branch to the project site is the Colonial Heights branch at 4799 Stockton Boulevard, approximately 1.3 miles south of the existing CUP.

3.13.2 Environmental Impacts

This section describes the environmental impacts associated with public services that would result from implementation of the proposed project. It describes the methods used to determine the effects of CUP Expansion Project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts are provided, if applicable.

Methods for Analysis

This analysis evaluates the potential for adverse physical impacts due to the proposed CUP Expansion Project, including impacts resulting from the provision of new or altered public service facilities. The evaluation of impacts is based on the project's potential to increase demand for public services or create a need for new or physically altered governmental facilities to maintain existing service ratios, response times, capacities, and/or other performance objectives. If the project would result in increased demand or an unmet need for services, this could indicate that new facilities or additional personnel would be needed.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the CUP Expansion Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or creation of a 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 following public services:
    - Fire protection
    - Police protection
    - Schools
    - Parks
    - Other public facilities

Impacts and Mitigation Measures

Impact PS-1: Create a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection facilities

Summary of Impact PS-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	LTS	None	—
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that construction and operational activities associated with implementation of the 2020 LRDP Update would result in less-than-significant impacts on fire protective services.

CUP Expansion Project Impacts

Except for the new transmission line to the existing offsite SMUD East City Substation, all upgrades and expansions, including the make-ready projects, new annex and associated improvements and industrial components, and removal of a portion of the FSSB, would be done onsite at and around the existing CUP. The project would increase CUP operating efficiency and improve the underground utility distribution system to serve existing and planned campus needs better, ensure continued safe operations, and achieve the University's sustainability goals.

The project would not include any new residential or commercial uses that would directly increase the population and result in a substantial increased demand for fire protection services. The project would result in a temporary increase in the number personnel needed for construction (i.e., demolition and material removal, construction of new facilities). In addition, the project could result in an small increase in the number of employees, with 12 employees added incrementally over the long term as the project is phased in. Most workers are anticipated to come from the existing labor pool.

The project would not result in a substantial increase in population and would not trigger the need for additional SFD resources or new fire protection facilities, the construction of which could have an impact on the environment. In addition, all new CUP facilities would be designed, plan checked, and built consistent with all applicable codes, including the CBC, which includes fire prevention and suppression measures. Impacts would remain **less than significant,** and no mitigation would be required. Thus, the project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures would be necessary.

Impact PS-2: Create a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for police protection facilities.

Summary of Impact PS-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	LTS	None	—
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that construction and operational activities associated with implementation of the 2020 LRDP Update would result in less-than-significant impacts related to police protection.

CUP Expansion Project Impacts

Implementation of the project would result in construction and operation of new utility structures and facilities within the service area of the UC Davis Police Department and Sacramento Police Department. Except for the new utility line to the existing SMUD substation, all new facilities would be within the jurisdiction of the existing on-campus UC Davis Police Department. The project would not include any new residential or commercial uses that would substantially increase the on-campus population, the number of residents, or the number of students. The project would result in a temporary increase in the number of construction personnel, who would be needed to build the new facilities, and an incremental increase in the number of employees over the long term as the project is phased in (i.e., 12 additional employees).

The project would not result in a direct increase in population that could result in a direct increased demand for law enforcement services. The project would expand existing CUP facilities in an area that already contains such uses and connect a new electrical line to the existing SMUD East City Substation; the line would be installed underground. None of the proposed improvements would result in a substantial direct or indirect increase in population that would create a substantial new demand for law enforcement services from either the UC Davis Police Department or the Sacramento Police Department. Thus, no new police facilities would be needed, the construction or operation of which could result in impacts on the environment. Impacts would remain **less than significant**, and no mitigation would be required. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures would be necessary.

Impact PS-3: Create a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for school facilities

Summary of Impact PS-3 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	LTS	None	—
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that construction and operational activities associated with implementation of the 2020 LRDP Update would result in less-than-significant impacts on school facilities because the population affiliated with the Sacramento Campus and the population increase resulting from implementation of the 2020 LRDP Update would not result in a substantial increase in enrollment within any one school district.

CUP Expansion Project Impacts

The site for the CUP Expansion Project, including the new connection to the SMUD substation, is within the service boundaries of the SCUSD. The project would not include any new residential or commercial uses that would directly increase the on-campus population or the number of students. The project would result in a temporary increase in the number of construction personnel, who would be needed to build the new facilities, and an incremental increase in the number of employees over the long term as the project is phased in (i.e., 12 additional employees). New employees are anticipated to live within the boundaries of the SCUSD. Children of these employees are anticipated to attend schools within the respective districts and not be concentrated in any one area. The increase in the number of school-age students associated with the new personnel who may move into the area for new jobs would be small; existing school resources would not be significantly affected by any minor, incremental increase in enrollment. Thus, the project would not result in a demand for new or expanded school facilities, the construction or operation of which could result in significant impacts on the environment. Impacts would remain **less than significant**, and no mitigation would be required. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures would be necessary.

Impact PS-4: Create a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for other public facilities

Summary of Impact PS-4 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	LTS	None	—
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that construction and operational activities associated with implementation of the 2020 LRDP Update would result in less-than-significant impacts on other public facilities, such as libraries, because none are in proximity to the Sacramento Campus.

CUP Expansion Project Impacts

The site for the CUP Expansion Project, including the new connection to the SMUD East City Substation, is within the public service boundaries of the City. The nearest library is more than 1 mile southwest of the existing CUP. The project would result in a temporary increase in the number of construction personnel, most of whom are anticipated to come from local areas, as well as an incremental increase in the number employees over the long term as the project is phased in (i.e., 12 additional employees). The incremental increase in the number of new employees who may move into the area for the new jobs would be small and would not result in a demand for new or expanded public facilities, the construction or operation of which could result in significant impacts on the environment. Impacts would remain **less than significant**, and no mitigation would be required. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures would be necessary.

3.14 Recreation

This section describes the regulatory and environmental setting for recreation in the area of the Central Utility Plant (CUP) Expansion Project, analyzes effects on recreation that would result from implementation of the CUP Expansion Project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

No comments specific to recreation were received during the notice of preparation (NOP) comment period.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the 2020 Long-Range Development Plan Update Supplemental Environmental Impact Report (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.14.1 Existing Conditions

Regulatory Setting

Section 3.14 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for recreation. There have been no relevant updates to Section 3.14.1 of the 2020 LRDP Update SEIR since 2019.

University of California

As noted in Section 3.0.2, *University of California Autonomy*, the University of California (UC or University), as a constitutionally created State of California (State) entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the UC that are in furtherance of its educational purposes. However, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

Environmental Setting

The UC Davis Sacramento Campus does not contain park facilities for organized active recreation, and no recreational uses have been added since the 2020 LRDP Update. As described in the 2020 LRDP Update SEIR, existing open space areas on campus provide walking paths and seating areas and support other forms of passive recreation. These areas include Cancer Survivors Park, at the intersection of 2nd Avenue and Stockton Boulevard, which includes native plantings, grassy areas, seating areas, and sculptures. The Sacramento Campus also has courtyards, landscaped walkways, and outdoor art pieces throughout the campus. The major campus open space is northwest of the CUP site, adjacent to the Facility Support Services Building (FSSB). It contains a walking path, benches, and native plantings. Campus open spaces are used by employees, patients, and visitors as well as residents from surrounding neighborhoods.

The Project includes two different underground feeders from the Sacramento Municipal Utility District (SMUD) East City Substation to the site for the CUP Expansion Project. Route 1 would travel south on 65th Street from the East City Substation to Broadway, west to 50th Street, and north to the CUP. This route borders Tahoe Park Elementary School, which is south of Broadway at 59th Street. Just south of the elementary school is Tahoe Park, which is accessible from Broadway and 60th Street as well as Broadway and 62nd Street. Tahoe Park is a community park that includes a public pool, softball fields, a soccer field, basketball court, play structures, and walking paths. Other parks in the vicinity of SMUD feeder Route 1 include Mae Fong Park, a community park approximately 0.15 mile to the east, and Greenfair Park, which is in the Fairgrounds neighborhood north of Broadway between Fairgrounds Drive and 53rd Street.

SMUD feeder Route 2 would travel northeast on T Street from 65th Street instead of Broadway. It would not border any nearby parks or recreational uses.

3.14.2 Environmental Impacts

This section describes the environmental impacts associated with recreation that would result from implementation of the CUP Expansion Project. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts are provided if applicable.

Methods for Analysis

The analysis below assesses the environmental effects of the CUP Expansion Project with respect to existing or currently proposed recreational uses and facilities in the plan area and in Sacramento. This analysis is based on a review of existing documents, policies, ordinances, and other regulations pertinent to recreation.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the CUP Expansion Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated.
- Construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

Impacts and Mitigation Measures

Impact REC-1: Increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated

Summary of Impact REC-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	LTS	None	—
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that implementation of the 2020 LRDP Update would increase the daily population on the UC Davis Sacramento Campus, with 21,199 people by 2040. It was concluded that most of the onsite daily population would reside throughout the surrounding Sacramento metropolitan area and would not be concentrated in any one area. Therefore, the 2020 LRDP Update would not substantially increase the use of park or recreational facilities in any one community because the population would reside in various communities across the Sacramento region and would not affect any one park facility. This impact was determined to be less than significant.

CUP Expansion Project Impacts

Make-ready projects as well as components of the CUP Expansion Project entail construction at existing developed facilities; they would not affect any existing recreational uses. SMUD feeder Route 1, which would be installed underground, would run along Broadway, an access route to several community parks, including Tahoe Park and Greenfair Park. Impacts on access would be temporary and short term. In addition, various other access points to Tahoe Park and Greenfair Park would remain accessible at all times.

It is anticipated that the CUP Expansion Project would add 12 new employees, who would be phased in over time as the project is constructed and CUP modernization continues under future phases. These 12 employees would represent a negligible increase in population compared to the total campus population. It is anticipated that the new employees would most likely reside throughout the surrounding Sacramento metropolitan region and would not be concentrated in any one area. Therefore, they would not substantially increase the use of existing neighborhood and regional parks or passive recreational uses on the Sacramento campus. This impact would be **less than significant**. Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP SEIR.

Mitigation Measures

No mitigation would be required.

Impact REC-2: Construction or expansion of recreational facilities that might have an adverse physical effect on the environment

Summary of Impact REC-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-Ready Projects	LTS	None	—
CUP Expansion	LTS	None	—
SMUD Component	LTS	None	—
Whole Project	LTS	None	—

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

Implementation of the 2020 LRDP Update would result in improvements in open space areas such as malls and quads, which would be designed to include key pedestrian walkways and locations for special events and gatherings. Secondary open spaces would include courtyards near buildings. Amenities such as benches would improve the outdoor space for patients, visitors, faculty, and the staff. The provision of these improvements would not require any major construction. This impact was determined to be ***less than significant***.

CUP Expansion Project Impacts

A bioswale would be constructed in the major campus open space area to reduce stormwater runoff. The bioswale would be immediately west of the new Parking Structure 6 driveway on the east side of the major open space area. The bioswale would not conflict with or remove the existing pedestrian path. Construction impacts would result from the temporary noise from equipment and earthmoving as well as the temporary views of the equipment itself, resulting in temporary impacts for recreationists. The bioswale would be consistent with the campus Open Space land use designation; a land use amendment would not be required. There would be no other impacts related to recreation. This impact would be ***less than significant.*** Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP SEIR.

3.15 Transportation and Circulation

This section describes the regulatory and environmental setting for transportation in the Central Utility Plant (CUP) Expansion Project area, analyzes effects on transportation and circulation that would result from implementation of the CUP Expansion Project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

In response to the Notice of Preparation for this Environmental Impact Report (EIR), commenters made the following requests related to transportation and circulation.

- Consider the Stockton Boulevard Plan in the analysis.
- Comply with Sacramento City Code Section 12.20.020 to prepare a traffic control plan for any construction activities that may obstruct vehicular or pedestrian traffic on city streets for City approval.
- Comply with City Code Section 17.700.060 to prepare a Transportation Management Plan for City approval.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2020 Long Range Development Plan Update Supplemental EIR* (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150(c)). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.15.1 Existing Conditions

Regulatory Setting

Section 3.15.1 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for transportation and circulation. The following discussion summarizes Section 3.15.1 of the 2020 LRDP Update SEIR and applicable updates since 2019.

University of California

As noted in Section 3.0.2, *University of California Autonomy*, the University of California (UC or University), as a constitutionally created State entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the UC that are in furtherance of its educational purposes. However, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

The University of California Policy on Sustainable Practices

The University of California Policy on Sustainable Practices (University of California 2023) has been updated twice since the 2020 LRDP Update SEIR was finalized.

- February 2022—revisions included additional provisions related to sustainable transportation, which are not applicable to the project.
- July 2023—updates the University's greenhouse gas reduction goals to focus on decarbonizing campus operations, but did not change any provisions related to transportation.

UC Davis Sacramento Campus 2020 Long Range Development Plan Update

The *UC Davis Sacramento Campus 2020 Long Range Development Plan Update* (2020 LRDP Update) is a planning document for the Sacramento Campus "that anticipates population growth and establishes the land use patterns and relevant policies to guide implementation of facilities and infrastructure as the campus evolves." The 2020 LRDP Update includes the following relevant planning principles related to transportation (University of California, Davis 2020).

Principle #3: Provide Convenient Multimodal Access to and within the Campus

This principle emphasizes the importance of convenient access to and connections within the Sacramento campus. It states that "a variety of transportation modes should be equally convenient and welcoming to support people no matter their chosen mode, as well as support the University's sustainability goals." It also notes that parking will be consolidated into convenient structures as the campus develops, and that these structures will be easily accessed by vehicles, on foot, and by bike. To reduce potential conflicts and increase the feeling of safety and comfort for pedestrians and cyclists, major vehicular movement is focused on the outer roads, which includes 2nd Avenue.

Principle #4: Improve Pedestrian Connections throughout the Campus

All areas of campus will be improved for better pedestrian access through pedestrian walkways and safe, tree-lined sidewalks with efficient ways to move throughout the Sacramento Campus.

Principle #5: Provide Attractive Campus Entries and Edges

This principle focuses on entries and entry types for the various members of the campus community and the modes in which they arrive, including pedestrians, bicycles, transit, and vehicles. It also identifies strategies to improve campus entries and edges for these different travel modes.

Federal

No federal plans, policies, regulations, or laws related to transportation and circulation apply to the CUP Expansion Project.

State

The State of California has enacted several pieces of legislation that outline the State's commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT) and contribute to reductions in greenhouse gas emissions in line with state climate goals. This legislation is described in Section 3.15.1 of the 2020 LRDP Update SEIR and is incorporated by reference.

Technical Advisory on Evaluating Transportation Impacts in CEQA

The Governor's Office of Planning and Research (OPR) released a *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory) in December 2018. The Technical Advisory provides advice and recommendations to CEQA lead agencies on analyzing VMT impacts per changes made by Senate Bill 743. This includes technical recommendations regarding the

assessment of VMT, thresholds of significance, VMT mitigation measures, and screening thresholds for certain land use projects. Lead agencies may consider and use these recommendations at their discretion.

The Technical Advisory identifies screening thresholds to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. The Technical Advisory suggests that projects meeting one or more of the following criteria should be expected to have a less-than-significant impact on VMT.

- **Small projects**: Small projects are projects consistent with a sustainable communities strategy and local general plan that generate or attract fewer than 110 trips per day.
- **Projects near major transit stops**: These projects can consist of residential, retail, office, or a mix of these uses proposed within 0.5 mile of an existing major transit stop or an existing stop along a high-quality transit corridor.
- **Affordable residential development**: A project consisting of a high percentage of affordable housing may be a basis to find a less-than-significant impact on VMT.
- **Local-serving retail**: Local-serving retail development tends to shorten trips and reduce VMT. The Technical Advisory encourages lead agencies to decide when a project will likely be local-serving, but generally acknowledges that retail development including stores larger than 50,000 square feet might be considered regional-serving. The Technical Advisory suggests lead agencies analyze whether regional-serving retail would increase or decrease VMT (i.e., not presume a less-than-significant impact).
- **Projects in low-VMT areas**: Residential and office projects that incorporate similar features (i.e., density, mix of uses, transit accessibility) as existing development in areas with low VMT will tend to exhibit similarly low VMT.

The Technical Advisory also provides guidance on impacts on transit. Specifically, the Technical Advisory suggests that lead agencies generally should not treat the addition of new transit users as an adverse impact. As an example, the Technical Advisory suggests that "an infill development may add riders to transit systems and the additional boarding and alighting may slow transit vehicles, but it also adds destinations, improving proximity and accessibility. Such development also improves regional vehicle flow by adding less vehicle travel onto the regional network."

Regional and Local

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is the Metropolitan Planning Organization governing the six-county Sacramento region consisting of El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba Counties and their 22 cities. SACOG is responsible for the preparation of, and updates to, the *Metropolitan Transportation Plan/Sustainable Communities Strategy* (Sacramento Area Council of Governments 2019). The current SACOG 2020 *Metropolitan Transportation Plan/Sustainable Communities Strategy* was adopted by the SACOG board on November 18, 2019.

The SACOG 2020 *Metropolitan Transportation Plan/Sustainable Communities Strategy* acknowledges the following.

> a more compact land development pattern and providing alternatives to driving alone are critical strategies for reducing the amount of driving we do in our daily lives. Location within the region is

likely the most important variable in determining how much time people spend in their vehicles. Communities within existing urban areas, and with a mix and density of uses, tend to produce less VMT per resident than places that are farther away and spread out. These "lower VMT" areas also tend to have the density and mix of uses to support better transit service and are friendlier to biking and walking for some trips.

The SACOG 2020 *Metropolitan Transportation Plan/Sustainable Communities Strategy* shows that the Sacramento Campus is in a low-VMT-generating area, where VMT per capita levels measure between 50 and 85 percent of the SACOG regional average, as shown in Figure 3.15-1 and Figure 3.15-2 of the 2020 LRDP Update SEIR.

City of Sacramento General Plan

On March 3, 2015, the City of Sacramento City Council adopted the *Sacramento 2035 General Plan* (City of Sacramento 2015). The Mobility Element of the *Sacramento 2035 General Plan* outlines goals and policies that coordinate the transportation and circulation system with planned land uses.

Since 2019, the City of Sacramento has undertaken an update to the 2035 General Plan. The Sacramento 2040 General Plan is currently in the public review phase. The Mobility chapter of the Sacramento 2040 General Plan public review draft includes goals and policies aimed at encouraging equitable and sustainable mobility, with a focus on changes that prioritize walking, biking, and transit over automobiles.

Stockton Boulevard Plan

The City of Sacramento is partnering with residents, businesses, and organizations to revitalize the Stockton Boulevard corridor and plan for future growth. Some of the primary goals are to improve quality of life, increase economic opportunity for residents and businesses, and increase community ownership (City of Sacramento 2022). A community working version of the plan is available, and a public review draft is anticipated sometime in 2023.

Environmental Setting

Section 3.15.1 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the environmental setting for transportation and circulation, which includes the CUP Expansion Project site. The following describes changes to the transportation network since the 2020 LRDP Update SEIR was finalized.

Roadway System

Regional Roadways

Regional access to the Sacramento Campus is provided by U.S. Highway 50 (US 50), State Route (SR) 99, and the Capital City Freeway. SR 99 and Capital City Freeway are largely unchanged in the study area since the 2020 LRDP Update SEIR was finalized. Below describes the changes to US 50.

US 50 is a cross-country east—west highway that provides regional access in the Sacramento region. In the study area, US 50 is a limited-access freeway and generally consists of eight travel lanes of four mixed-flow lanes in each direction. The US 50 Multimodal Corridor Enhancement and Rehabilitation Project began construction in 2020. This project will add a high-occupancy vehicle (HOV) lane in each direction and replace the existing pavement from Interstate 5 to Watt Avenue in the study area. The project is planned for completion in 2024.

Local Roadways

Local roadways adjacent to the Sacramento Campus, including Stockton Boulevard, T Street, V Street, and Broadway remain largely unchanged since the 2020 LRDP Update SEIR was finalized. A few roadways on campus, including X Street, 2nd Avenue, and 48th Street are affected by current construction activity. The affects range from shoulder and sidewalk closures, such as those on 2nd Avenue west of the CUP site adjacent to the Aggie Square Project, to partial closures and detours, such as those on X Street. This is resulting in temporary on-campus circulation changes due to these closures and detours.

Bicycle and Pedestrian Facilities

The bicycle and pedestrian facilities in the study area remain largely unchanged since the 2020 LRDP Update SEIR was finalized. As noted previously, construction activity on the campus has required closing some on-campus sidewalks and bicycle facilities, resulting in temporary detours for bicyclists and pedestrians. However, sidewalk facilities generally remain open on at least one side of the street if temporarily closed on the opposite side of the street, and "share the road" signage has been added where on-street bike lanes are temporarily disrupted.

Transit Service and Facilities

Transit facilities in the study area (e.g., bus stop and light rail station locations and amenities) remain largely unchanged since the 2020 LRDP Update SEIR was finalized. The Sacramento Campus continues to be served by Sacramento Regional Transit (SacRT) bus Routes 38 and 51. The weekday frequency of Route 38 has increased to 30-minute headways (previously 1-hour headways). Otherwise, the routing of both Routes 38 and 51 remain mostly unchanged in the study area; and the frequency of Route 51 service remains the same (i.e., 15-minute headways on weekdays) as presented in Section 3.15.1 of the 2020 LRDP Update SEIR.

3.15.2 Environmental Impacts

This section describes the environmental impacts associated with transportation and circulation that would result from implementation of the CUP Expansion Project. It describes the methods used to determine the effects of the CUP Expansion Project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts are provided, if applicable.

Significance Criteria

In accordance with Appendix G of the CEQA Guidelines, the CUP Expansion Project would be considered to have a significant effect if it would result in any of the following conditions.

- Conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities.
- Conflict or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b).
- Substantial increase in hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Potential to cause inadequate emergency access.

Thresholds of Significance

This analysis considers the significance criteria obtained from Appendix G of the CEQA Guidelines to identify refined thresholds of significance for each criterion. These thresholds are identified below.

Conflict with Existing and Planned Facilities

The project would result in a significant transportation impact if it would do any of the following.

- Physically disrupt an existing bicycle facility, pedestrian facility, or transit service/facility.
- Interfere with the implementation of a planned bicycle facility, pedestrian facility, or transit service/facility.

VMT Impacts

CEQA Guidelines Section 15064.3, subdivision (b) outlines criteria for analyzing transportation impacts using VMT. For land use projects, VMT exceeding an applicable threshold of significance may indicate a significant impact.

Hazards Impacts

The project would result in a significant transportation impact if it would do any of the following.

- Result in a geometric design feature that is inconsistent with applicable design standards.
- Result in a change to the volume, mix, or speed of traffic that is not compatible with the existing facility design.

Emergency Access Impacts

The project would result in a significant transportation impact if it would result in roadway and transportation facilities that impede access for emergency response vehicles.

Construction Impacts

The project would result in a significant transportation impact if construction-related activity would do any of the following.

- Result in hazardous conditions for motorists, bicyclists, pedestrians, or transit users.
- Inhibit access for emergency response vehicles.

Methods for Analysis

The transportation impact analysis methodology varies by travel mode and technical area. The specific analysis methods are described below.

Bicycle and Pedestrian Facilities

The impact assessment for bicycle and pedestrian travel considers existing and planned bicycle and pedestrian facilities and reviews the CUP Expansion Project to determine whether it would physically disrupt an existing facility or prevent the implementation of a planned facility. This assessment also considers whether the project would increase conflicts between bicyclists and pedestrians and other modes of travel.

Transit Service and Facilities

The impact assessment for transit considers existing and planned transit facilities and services and reviews the CUP Expansion Project to determine whether it would physically disrupt an existing service or facility or prevent the implementation of a planned service or facility.

VMT Impact Assessment

The VMT impact analysis is based on a review of documents pertaining to the CUP Expansion Project and the anticipated new trips generated by the project, and comparing these documents and data to the VMT impact analysis described in Section 3.15 of the 2020 LRDP Update SEIR.

Consistent with Section 3.15 of the 2020 LRDP Update SEIR, the VMT impact analysis follows the guidance provided in the Technical Advisory to assess the project's VMT impacts, specifically considering the following.

- Does the project meet one or more of the screening thresholds identified in the Technical Advisory such that a detailed analysis is not necessary?
- If so, what information or data are available to support the conclusion that the project meets the screening threshold and should be considered to have a less-than-significant transportation impact?

VMT Screening Analysis

The Technical Advisory identifies "screening thresholds" to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. As described in the *Regulatory Setting* section, the Technical Advisory suggests the following projects should be expected to have a less-than-significant impact on VMT.

- Small projects
- Projects near major transit stops
- Affordable residential development
- Local-serving retail
- Projects in low-VMT areas

Of these project types, only the criterion for projects near major transit stops are codified in the updated CEQA Guidelines. The remaining criteria for small projects, affordable residential development, local-serving retail, or projects in low-VMT areas are not codified in the CEQA Guidelines but are suggested by OPR based on research cited in the Technical Advisory.

Of these screening criteria, the following potentially apply to the CUP Expansion Project.

- Small projects
- Projects in low-VMT areas

Presumption of Less-Than-Significant Impact for Small Projects

The Technical Advisory recommends that small projects—those consistent with a sustainable communities strategy and local general plan that generate or attract fewer than 110 trips per day—

should be expected to have a less-than-significant impact on VMT. This criterion did not apply to the 2020 LRDP Update SEIR given the amount of planned growth included in the 2020 LRDP SEIR Update. However, the CUP Expansion Project would generate relatively few new vehicle trips and may qualify for screening based on the Technical Advisory's definition.

The proposed buildings, utilities, and equipment that would be constructed for the CUP Expansion Project would generate relatively few new vehicle trips. As outlined in Chapter 2, *Project Description*, 12 new employees are expected with the CUP Expansion Project. Beyond trips made by these new employees, operation of the CUP Expansion Project would not result in an increase in delivery of goods or materials, or other activities that would generate regular trips to the site.

Presumption of Less-Than-Significant Impact for Projects in Low-VMT Areas

The Technical Advisory states that "projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT. Maps created with VMT data, for example from a travel survey or a travel demand model, can illustrate areas that are currently below threshold VMT." The Technical Advisory goes on to state that "new development in such locations would likely result in a similar level of VMT" and "such maps can be used to screen out residential and office projects from needing to prepare a detailed VMT analysis."

The Technical Advisory recommends analyzing work VMT per employee for employment uses. The average work VMT per employee is largely driven by the regional location of the workplace, which considers the location's proximity to complementary land uses (i.e., distance between the workplace and employee residences, or services that workers would travel to) as well as access to transit, bicycle, and pedestrian facilities. The 2020 LRDP Update SEIR concluded that the Sacramento Campus is located in a low VMT area. The workplace VMT-per-employee data shown in Figure 3.15-4 and Table 3.15-3 of the 2020 LRDP Update SEIR show that the average work VMT per employee for the campus area is about 19 percent below the regional average.[1]

Other Impacts

Potential transportation impacts related to transportation hazards, emergency access, and construction activity are based on a review of CUP Expansion Project changes to the transportation network and a qualitative assessment of whether those changes would conflict with applicable standards or result in detrimental conditions based on the thresholds of significance.

Project Travel Characteristics

The CUP Expansion Project would result in 12 new employees. Beyond these new employees, the CUP Expansion Project would not generate an increase in delivery of goods or materials or result in activities that would generate regular trips to the site.

These 12 new employees would be within the total campus population that was evaluated in the 2020 LRDP Update SEIR. These additional employees are estimated to generate 46 total daily vehicle trips. Since these 12 employees are within the total campus population used for the 2020

[1] Sacramento Campus = 14.82 VMT per employee; SACOG region = 18.33 VMT per employee. Workplace VMT Regional Average Comparison: (14.82/18.33) - 1 = -19.1 percent.

LRDP Update SEIR, the impact of these 46 daily vehicle trips were previously analyzed in the 2020 LRDP Update SEIR.

Impacts and Mitigation Measures

Impact TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities

Summary of Impact TRA-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	LTS	None	-
Whole project	LTS	None	-

CUP = Central Utility Plant; SMUD = Sacramento Municipal Utility District; LTS = less than significant; S = significant.

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that implementation of the 2020 LRDP Update would increase bicycle and pedestrian travel but would not physically disrupt an existing pedestrian or bicycle facility or interfere with implementation of a planned pedestrian or bicycle facility. Therefore, the impact on bicycle and pedestrian travel was determined to be less than significant.

The 2020 LRDP Update SEIR acknowledged that growth associated with the 2020 LRDP Update would increase peak-hour delays for bus transit routes that operate on roadways surrounding the campus, which would adversely affect bus transit operations. This impact on transit operations was determined to be significant and unavoidable.

CUP Expansion Project Impacts

The new PS6 roadway that would be constructed as part of the make-ready projects would partially conflict with an existing pedestrian pathway extending south from 2nd Avenue into the open space to the west of the new PS6 roadway. This existing pathway aligns with the existing pedestrian crossing on 2nd Avenue, which would be relocated about 15 feet west with the new PS6 roadway. As stated in Chapter 2, this existing pathway would be widened to maintain its existing 15-foot width with the implementation of the new PS6 roadway. In addition, a new sidewalk would be added on the east side of the PS6 roadway to provide a continuous pedestrian access between 2nd Avenue and PS6.

The other make-ready projects and elements of the CUP Expansion Project would not disrupt an existing bicycle or transit facility or interfere with the implementation of a planned bicycle, pedestrian, or transit facility. There are no existing bus stops or UC Davis shuttle stops along 2nd Avenue adjacent to the CUP Expansion Project site that would be affected by the project.

As noted in the *Project Travel Characteristics* section, the CUP Expansion Project would result in 46 daily trips, of which about 10 trips would occur during the AM and PM peak hours. These trips would have minimal impact on peak-hour delays on adjacent roadways. Therefore, the CUP

Expansion Project would not adversely affect bus transit operations. Therefore, the impact would be **less than significant**.

The CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures are necessary.

Impact TRA-2: Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)

Summary of Impact TRA-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	LTS	None	-
Whole project	LTS	None	-

CUP = Central Utility Plant; SMUD = Sacramento Municipal Utility District; LTS = less than significant.

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that implementation of the 2020 LRDP Update would result in a less-than-significant impact on VMT. This conclusion was supported by the following data.

- The Sacramento Campus is in a low-VMT-generating area of the Sacramento region, per data from SACOG.
- The proposed development under the 2020 LRDP Update is similar to existing characteristics of the study area (i.e., density, mix of uses, and transit accessibility) and, thus, would be expected to generate VMT at a comparable rate to this existing low-VMT-generating area.
- Implementation of the 2020 LRDP Update would add residential and increase commercial retail land uses on the campus, which would result in more complementary land uses. This would increase land use diversity, increase internal trip capture, and reduce VMT per capita.
- A portion of the campus (north of X Street) is within 0.5 mile of an existing major transit stop (i.e., a SacRT Gold Line light rail transit station), and would qualify for a presumption of less-than-significant impact per CEQA Guidelines Section 15064.3, subdivision (b)(1).

CUP Expansion Project Impacts

As noted in the *Methods of Analysis* section, the Technical Advisory recommends that small projects—those consistent with a sustainable communities strategy and local general plan that generate or attract fewer than 110 trips per day—should be expected to have a less-than-significant impact on VMT. The CUP Expansion Project is forecast to generate 46 daily trips, which falls below this threshold.

The Technical Advisory also states that "projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT." Section 3.15.2 of the 2020 LRDP Update SEIR, which is incorporated by reference, demonstrates that the Sacramento Campus, including the CUP Expansion Project site, is within a low-VMT area. Specifically for the CUP Expansion Project, the workplace VMT per employee data shown in Figure 3.15-4 and Table 3.15-3 of the 2020 LRDP Update SEIR show that the average work VMT per employee for the campus area is about 19 percent below the regional average.

Furthermore, the 12 new employees generated by the CUP Expansion Project would be within the total campus population that was evaluated in the 2020 LRDP Update SEIR. Beyond these new employees, the CUP Expansion Project would not generate an increase in delivery of goods or materials or result in activities that would generate regular trips to the site. Therefore, the impact caused by the vehicle trips generated by these new employees is already addressed by the 2020 LRDP Update SEIR.

The CUP Expansion Project would not result in vehicle travel beyond what was analyzed in the 2020 LRDP Update SEIR, is expected to generate 46 daily trips, which qualifies as a small project per the Technical Advisory, and is located in a low-VMT area. Therefore, the project impact would be **less than significant**. Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures are necessary.

Impact TRA-3: Result in changes to the transportation system that would create hazardous features or incompatible traffic uses

Summary of Impact TRA-3 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	LTS	None	-
Whole project	LTS	None	-

CUP = Central Utility Plant; SMUD = Sacramento Municipality Utility District; LTS = less than significant.

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that implementation of the 2020 LRDP Update would not result in roadways or transportation facilities that would be inconsistent with applicable design standards and, therefore, would have a less than significant impact.

CUP Expansion Project Impacts

The new PS6 roadway that would be constructed as part of the make-ready projects would create a new intersection on 2nd Avenue. To facilitate vehicle-turning movements into the new PS6 roadway, striping changes are proposed on 2nd Avenue to accommodate a new westbound left-turn lane. The

striping and intersection improvements would be consistent with applicable City of Sacramento design standards. Therefore, this impact would be **less than significant**. Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures are necessary.

Impact TRA-4: Result in inadequate emergency access

Summary of Impact TRA-4 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	None	-
CUP Expansion	LTS	None	-
SMUD Component	LTS	None	-
Whole project	LTS	None	-

CUP = Central Utility Plant; SMUD = Sacramento Municipality Utility District; LTS = less than significant.

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that implementation of the 2020 LRDP Update would provide a roadway and transportation network designed to maintain high levels of accessibility, with routing for emergency vehicles around the perimeters of buildings and adequate access for emergency responders to building access points and, therefore, would have a less-than-significant impact.

CUP Expansion Project Impacts

The new PS6 roadway that would be constructed as part of the make-ready projects would create a new intersection on 2nd Avenue. This new intersection would require relocating the existing pedestrian crossing on 2nd Avenue further west, which would conflict with the existing service drive to the east of Research Buildings 1, 2, and 3. Therefore, the service road would be rerouted into Parking Lot 17. However, the service roadway between Research Building 3 and 2nd Avenue would remain and be converted to emergency vehicle access (EVA) only. This will ensure continued emergency vehicle access to Research Buildings 1, 2, and 3 from 2nd Avenue in an emergency event. Consequently, this impact would be **less than significant**. Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation measures are necessary.

Impact TRA-5: Result in construction activity that could cause temporary impacts on transportation and traffic

Summary of Impact TRA-5 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	S	LRDP-TRA-5	LTS
CUP Expansion	S	LRDP-TRA-5	LTS
SMUD Component	S	LRDP-TRA-5	LTS
Whole project	S	LRDP-TRA-5	LTS

CUP = Central Utility Plant; SMUD = Sacramento Municipal Utility District; S = significant.

Impacts Identified in the 2020 LRDP Update SEIR

Impact LRDP-TRA-5 in the 2020 LRDP Update SEIR states that implementation of the 2020 LRDP Update would involve construction activities that could cause temporary impacts on transportation facilities. These impacts include temporary roadway, bikeway, and sidewalk closures; degrading roadway pavement conditions; temporary degradation in traffic operations; temporary relocation or displacement of transit or shuttle stops; closure of parking lots resulting in displaced parking; and increasing potential for conflicts between construction vehicles and bicyclists and pedestrians. The 2020 LRDP Update SEIR concluded this would have a significant impact.

CUP Expansion Project Impacts

Consistent with Impact LRDP-TRA-5 in the 2020 LRDP Update SEIR, construction activity associated with the CUP Expansion EIR Project would cause temporary impacts on transportation facilities. This would likely include temporary roadway, bikeway, and/or sidewalk closures associated with construction of all project components. Construction of the make-ready projects would require temporary closure of campus roadways, bikeways, and/or sidewalks to install new utility lines and construct the new PS6 roadway and new intersection on 2nd Avenue. Existing transportation facilities, such as sidewalks or parking, may need to be routed to allow for the reroute of site utilities and Annex Building site preparation,

Similarly, temporary roadway, bikeway, and/or sidewalk closures could be necessary to install the new Sacramento Municipal Utility District (SMUD) transmission line. These temporary road closures and detours would vary in location and duration based on construction requirements, but would likely include City of Sacramento streets between the campus and the SMUD's East City Substation at 6180 Folsom Boulevard (see Route 1 and Route 2 shown in Figures 2-5a and 2-5b).

During the construction of the CUP Expansion Project, trips made by construction staff along with delivery of construction materials and equipment could result in a temporary increase in traffic demand. This increase in traffic demand, temporary roadway closures, and concurrent construction activity on the campus (e.g., at the California Tower) could result in temporary degradation in traffic operations on campus roadways. Furthermore, the heavy nature of construction equipment could result in degradation of pavement conditions.

Preparing a Construction Traffic Management Plan (TMP) per Mitigation Measure LRDP-TRA-5 that satisfies the City of Sacramento Department of Public Works for City-owned streets, per Sacramento

City Code Section 12.20.020, and ensures the performance standards outlined in Mitigation Measure LRDP-TRA-5 are maintained throughout project construction would reduce this impact to **less than significant with mitigation**. Therefore, the CUP Expansion Project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

Mitigation Measure LRDP-TRA-5: Prior to the issuance of any grading or building permits, a Construction Traffic Management Plan (TMP) will be prepared to the satisfaction of UC Davis Health and the City of Sacramento Department of Public Works for City-owned roadways

The Construction TMP will include items such as the following.

- Preserving emergency vehicle access routes to existing buildings on the Sacramento Campus.
- Providing truck circulation routes/patterns that minimizes effects on existing vehicle traffic during peak travel periods and maintains safe bicycle circulation.
- Monitoring roadbed damage and timing for completing repairs.
- Preserving safe and convenient passage for bicyclists and pedestrians through/around construction areas.
- Creating methods for partial (i.e., single lane)/complete street closures (e.g., timing, signage, location and duration restrictions), if necessary.
- Identifying detour routes for roadways subject to partial/complete street closures.
- Identifying temporary UC Davis shuttle stops and detoured shuttle routes if existing stops or routes are affected.
- Identifying temporary SacRT bus stops and detoured bus routes, if existing stops or routes are affected.
- Developing criteria for use of flaggers and other traffic controls.
- Providing a point of contact for nearby residents, Sacramento Campus staff, students, and visitors, and other stakeholders to contact to obtain construction information and have questions answered.

The Construction TMP will be developed so that the following performance standards are achieved throughout project construction.

- Maintain emergency vehicle access to all buildings on the Sacramento Campus at all times.
- Maintain identified emergency vehicle routes to UC Davis Health medical facilities at all times. Notify appropriate contacts for UC Davis Health and/or emergency responders at least 24 hours prior to any construction-related partial/complete closures that may affect emergency vehicle routes, and provide clear identification of detours when necessary.
- Minimize construction traffic during morning and evening peak periods when street traffic on local and campus streets are highest.

- Close (i.e., partially or fully) any construction-related public roadways only during off-peak periods and provide appropriate construction signage, including detour routing.
- Limit detour routing to campus roadways or City collector and arterial roadways, such as Stockton Boulevard and Broadway, to the extent feasible. Include measures to minimize traffic increases on local residential roadways; this may include signage and law enforcement presence during partial/complete closures to discourage through-traffic use of local residential roadways.
- Clear roadways, sidewalks, crosswalks, and bicycle facilities of debris (e.g., rocks) that could otherwise impede travel and impact public safety, and maintain them in this condition.

UC Davis will also consider any concurrent construction activity and other active Construction TMPs when reviewing new Construction TMPs for specific Long Range Development Plan implementation projects. This review will address the effects of simultaneous construction activity.

3.16 Utilities and Service Systems

This section describes the regulatory and environmental setting for utilities and service systems in the Central Utility Plant (CUP) Expansion Project area, analyzes effects on utilities and service systems that would result from implementation of the CUP Expansion Project, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

In response to the Notice of Preparation for this Environmental Impact Report (EIR), commenters expressed the following concerns related to utilities and service systems:

Air Quality Management District

- Consider infrastructure options to enable provision of heavy-duty and fast electric vehicle charging along the extension to the Sacramento Municipal Utility District (SMUD) facility.

SMUD

- Consider potential conflicts with existing utilities, easements, and routing; electrical load requirements; and resulting need to relocate or remove SMUD infrastructure in the project areas.

City of Sacramento Department of Utilities

- Any new water or sewer connections require review and approval of the City of Sacramento Department of Utilities, would require encroachment permits, and would incur fees (sewer fees based on equivalent single dwelling).
- The project may require a water study and a sewer study.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2020 Long Range Development Plan Update Supplemental EIR* (2020 LRDP Update SEIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150(c)). Refer to Chapter 1, *Introduction*, of this EIR for the location where the 2020 LRDP Update SEIR is available for public inspection.

3.16.1 Existing Conditions

Regulatory Setting

Section 3.16 of the 2020 LRDP Update SEIR, which is incorporated by reference, addresses the regulatory background for utilities. The following discussion summarizes Section 3.16.1 of the 2020 LRDP Update SEIR and applicable updates since 2019.

University of California

As noted in Section 3.0.2, *University of California Autonomy*, the University of California (UC or University), Davis, as a constitutionally created State entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the UC that are in furtherance of its educational purposes. However, UC Davis may consider, for coordination

purposes, aspects of local plans and policies for the communities surrounding the Sacramento Campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

UC Policy on Sustainable Practices

The UC Policy on Sustainable Practices (Sustainable Practices Policy) discusses operational sustainability including green building design, clean energy, climate protection, recycling and waste management, and sustainable transportation, procurement, building operations, food services, and water systems. It also discusses integration of waste, climate, and other sustainability goals to reduce carbon emissions and waste generation, and the use of more efficient pass-through cooling systems.

UC Davis Drought Response Action Plan

The 2014 UC Davis Drought Response Action Plan (Kirk and Phillips 2014) discusses potable water conservation and efficiency including utilities and infrastructure and new construction and renovation and conservation actions to reduce water use including but not limited to use of reclaimed water in some of the cooling towers, operational changes to cooling tower cycling, replacement of some older water fixtures, implementation of behavior education, and leak and water waste reporting programs.

Federal

Clean Water Act

The Clean Water Act is overseen by the U.S. Environmental Protection Agency and includes regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff; established primary drinking water standards; and created the National Pollutant Discharge Elimination System regulatory program, which addresses discharge from industrial and municipal uses and runoff from construction sites disturbing more than 1 acre.

State

Assembly Bill 939

Assembly Bill (AB) 939 established the California Integrated Waste Management Board, which was tasked with decreasing waste sent to landfills. Waste diversion goals were set and cities and counties were required to submit plans to meet the waste reduction mandates. While the University of California is not subject to this act, waste reduction is a central element of the Sustainable Practices Policy discussed above.

California Universal Waste Law

The California Universal Waste Law went into effect February 2006 (California Code of Regulations, Title 22, Division 4.5, Chapter 23) and sets forth disposal requirements for a wide variety of hazardous wastes such as batteries, fluorescent tubes, and some electronic devices that contain mercury, lead, cadmium, copper, or other substances hazardous to human and environmental health; disallows use of solid waste landfills for disposal; and sets forth recycling requirements.

Government Code 54999

Government Code Section 54999 provides for the payment of fees in certain specific enumerated situations for capital improvements to utilities serving the University. A capital facilities fee that is imposed must be nondiscriminatory and the amount must not exceed the prorated amount necessary to provide capital facilities to the University.

California Green Building Standards Code

The California Green Building Standards Code (CALGreen) comprises Part 11 of the California Buildings Standards Code in Title 24 of the California Code of Regulations. CALGreen outlines mandatory and voluntary requirements for new residential and nonresidential buildings to reduce greenhouse gas emissions from buildings; promote environmentally responsible, cost-effective, healthier places to live and work; reduce energy and water consumption; respond to directives by the Governor; and meet greenhouse gas reduction goals.

California Water Code, Water Supply Wells, and Groundwater Management

Under the responsibility of the California Department of Water Resources, the California Water Code is intended, in part, to manage the water resources, including the use of groundwater wells, of California to benefit the state's people and to protect, restore, and enhance the natural and human environments.

Water Supply Assessment

Senate Bill 610 requires cities and counties, when evaluating large development and redevelopment projects, to request an assessment of the availability of water supplies from the water supply entity that will provide water to a project. A water supply assessment is required for any project subject to CEQA and for industrial parks planned to house more than 1,000 persons, occupy more than 40 acres of land, or have more than 650,000 square feet of floor area.

Sustainable Groundwater Management Act of 2014

The Sustainable Groundwater Management Act applies to all groundwater basins in the state and was intended to provide local agencies with the authority and the technical and financial assistance necessary to cooperatively manage groundwater within their region in a sustainable manner (Water Code Section 10720.1).

California's Integrated Waste Management Act of 1989

The intent of the California Integrated Waste Management Act is to minimize the amount of solid waste disposed of in landfills. The act led to the creation of the California Department of Resources Recycling and Recovery, which oversees, manages, and tracks waste generated. The department provides funding to help agencies meet the State's waste reduction, reuse, and recycling goals; promotes a sustainable environment and the use of new technologies to divert resources away from landfills; and is responsible for ensuring that waste management programs are carried out.

Assembly Bill 1826 (Chapter 727, Statutes of 2014)

AB 1826 requires a business that generates 4 cubic yards or more of organic waste per week to arrange for recycling services for that organic waste in a specified manner. The bill also requires a

business that generates 4 cubic yards or more of commercial solid waste per week, on and after January 1, 2019, to arrange for organic waste recycling services.

Regional and Local

City of Sacramento General Plan

The *Sacramento 2035 General Plan* was adopted in March 2015 (City of Sacramento 2015). The Environmental Resources and Utilities elements contain goals and policies related to stormwater quality, provision of adequate and sustainable facilities and services, and water supply.

The 2040 General Plan Update is currently in the public review phase (City of Sacramento 2023). The draft General Plan Update contains the following goals and policies in the Public Facilities and Safety Element related to utilities.

Policy PFS-3.1: Provision of Adequate Utilities. The City shall continue to provide reliable water, wastewater, and stormwater drainage utility services.

Policy PFS-3.2: Utility Sustainability. The City shall continue to improve the sustainability, resilience, and energy efficiency of its facilities, infrastructure, and operations consistent with the Climate Action and Adaptation Plan and the goal of achieving carbon neutrality by 2045.

Policy PFS-3.4: Water Distribution System Management. The City shall maintain and periodically update the Water Distribution System Master Plan to guide rehabilitation, replacement, and management of the potable water distribution system.

Policy PFS-3.6: Combined Sewer System Rehabilitation and Improvements. In keeping with its Combined Sewer System (CSS) Long Term Control Plan (LTCP), the City shall continue to rehabilitate and improve the CSS to decrease flooding, CSS outflows, and Combined System Overflows (CSOs). Through these improvements and requirements for new development, the City shall also ensure that development in the CSS area does not result in increased flooding, CSS outflows or CSOs or reduce the overall percentage of flow routed to the Sacramento [Regional Wastewater] Treatment Plant (SRWTP).

Policy PFS-3.12: Safe and Compatible Utility Design. The City shall ensure that public utility facilities are designed to be safe and compatible with adjacent uses.

Policy PFS-3.14: Underground Utilities. The City shall require new development to underground utility lines wherever feasible and coordinate with electricity and telecommunications providers to underground existing overhead lines where feasible.

Policy PFS-3.15: Adequate Drainage Facilities. The City shall ensure that all new municipal drainage facilities are adequately sized and constructed to accommodate stormwater runoff, including incorporating "green infrastructure" design and Low Impact Development (LID) techniques, where appropriate, stormwater treatment features, and, if applicable, trash capture devices for its stormwater facilities.

Policy PFS-3.16: Stormwater Design in Private Development. The City shall require proponents of new development and redevelopment projects to submit drainage studies that adhere to City stormwater design requirements and incorporate measures, including "green infrastructure", Low Impact Development (LID) techniques, stormwater treatment, and, if applicable, trash capture devices, to prevent on- or off-site flooding and improve runoff water quality.

Policy PFS-3.17: Regional Stormwater Facilities. The City shall coordinate efforts with Sacramento County and other agencies in the development of regional stormwater facilities.

Environmental Setting

The environmental setting of the project site is consistent with what was previously discussed and described in the 2020 LRDP Update. The following provides a summary of the setting, brief discussion of utility providers, and description of the utilities provided to the CUP site and within the CUP, and that the CUP provides to other areas of the campus.

Study Area

The project site consists of the existing CUP, which is bounded on the north and east by 2nd Ave, on the south by 49th Street, and on the west by the Facilities Support Services Building (FSSB), the FSSB site, and a portion of vegetated area next to the major campus open space adjacent to Parking Structure 6. In addition, two SMUD feeder routes are being analyzed between the SMUD East City Substation and the CUP in the city of Sacramento. These routes are shown on Figures 2-6a and 2-6b.

The CUP, in combination with the City of Sacramento, provides utility services to the campus. Potable water is supplied to the campus, in addition to the CUP, from the City via a network of water infrastructure. According to Sacramento Suburban Water District's (SSWD) 2020 Urban Water Master Plan, approximately 29,071 acre-feet of groundwater was pumped from the groundwater basin in 2020, and 35,000 acre-feet per year is the SSWD's sustainable pumping estimate for long-term groundwater pumping. There are currently no recycled water uses within SSWD, although reclaimed water is used for irrigation of some parks and streetscapes (Sacramento Suburban Water District 2021).

Water is provided to the Sacramento Campus from the City of Sacramento domestic water system. It is used by the existing CUP to supply the chilled water and stem system that is distributed by underground pipes to other campus buildings and to supply water to the four existing boilers. Wastewater from the CUP as well as remaining campus area is collected and discharged to the underground combined sewer system owned and operated by the City and flows to the Sacramento Regional Wastewater Treatment Plant, which is owned and operated by the Sacramento Regional County Sanitation District that has a permitted treatment dry-weather flow of 181 million gallons of wastewater per day and a daily peak wet-weather flow of 392 million gallons of wastewater per day (RWQCB 2023). UC Davis also owns and operates two onsite wells that supply irrigation water to the campus. One of these wells was decommissioned in 2021.

A combined storm-sewer overflow system within the Sacramento Campus consists of a combined sewer main under Y Street, connecting to the existing main under Stockton Boulevard, which is 27 inches in diameter. Under Y Street, the combined sewer flows to the west toward Stockton Boulevard. Beyond the end of Y Street, the combined sewer continues east across the campus, flowing toward the east, to a long concrete storage tank adjacent to 49th Street. The high point of this combined sewer is at the end of Y Street, and all service connections to this sewer are on the west side of this high point. Therefore, in normal operations, no combined storm-sanitary sewage flows to the storage tank. When the combined sewer hydraulic grade elevation goes above the invert at the high point, excess combined sewage flows toward the tanks. A lift station at the north end of the storage tanks pumps stored combined sewage at a constant rate to another combined sewer under V Street, which has a higher capacity than the Stockton Boulevard and Y Street combined sewers (Affiliated Engineers, Inc. 2022). According to the Utility Master Plan, in order to maintain the current operation of the combined sewer overflow system, future connections or demand flows shall be directed to the Y Street section of combined sewer, and no direct connection shall be made

to the combined sewer section that flows toward the storage tanks (Affiliated Engineers, Inc. 2022). The City has indicated that no studies are required for connection to combined sewer system mains 18 inches and larger. The CUP has an 8-inch sewer service line that connects to the combined sewer system (Affiliated Engineers, Inc. 2022).

Solid waste services within the campus and CUP are provided by the UC Davis Department of Facilities Operations and Maintenance. Nonrecycled and nonhazardous solid waste is transported to Republic Services Elder Creek Transfer Station in Sacramento and then to Forward Landfill in Manteca. Hazardous chemicals and radioactive waste are packaged, labeled, and categorized for transport to appropriate off-campus disposal sites.

The existing CUP provides normal and emergency electrical power to the Sacramento Campus buildings owned and operated by UC Davis. The On-Campus Partner Buildings purchase electricity and natural gas from SMUD and Pacific Gas and Electric Company (PG&E). The existing CUP normally operates to follow the electrical load of the campus with some power continuously exported to SMUD.

Underground chilled water, hot water, and steam piping distribution systems are routed from the CUP to the various buildings on campus. The main supply and return pipes are routed north through the center of the campus from the CUP to X Street and continue to the main hospital. Branch lines off the header system serve individual campus areas and buildings.

The Sacramento Campus owns and operates its own telecommunications infrastructure that supports over 12,000 faculty, staff, students, residents, and fellows data needs (Affiliated Engineers, Inc. 2019:10-1). Commercial telecommunication services are also provided to some campus buildings, which include both wired and wireless services.

3.16.2 Environmental Impacts

This section describes the environmental impacts associated with utilities and service systems that would result from implementation of the CUP. It describes the methods used to determine the effects of the CUP improvements and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts are provided, if applicable.

Methods for Analysis

This analysis evaluates the potential for adverse physical impacts to occur as a result of the provision of new or altered utilities and service systems due to the proposed CUP Expansion Project. This analysis is based on review of existing policies, ordinances, and other regulations pertinent to utilities and service systems.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the CUP Expansion Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

- Creation of a need for new or expanded entitlements or resources for sufficient water supply available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.
- A determination by the wastewater treatment provider that serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
- Generation of solid waste in exceedance of State or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
- Failure to comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

Impacts and Mitigation Measures

Impact UT-1: Relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects

Summary of Impact UT-1 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	No	-
CUP Expansion	LTS	No	-
SMUD Component	LTS	No	-
Whole project	LTS	No	-

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that while implementation of the 2020 LRDP Update would increase demand for utilities, the campus and surrounding area have adequate facilities to accommodate the projected demand, and the impact was determined to be less than significant.

CUP Expansion Project Impacts

New Water Systems

Construction of new water pipes within the project site would require some excavation and trenching as part of the make-ready projects. The project also involves installation of an underground feeder from the SMUD East City Substation to the CUP. Two possible routes are being analyzed (Figures 2-5a and 2-5b). Installation of the SMUD feeder would not require water supply or generate wastewater requiring disposal.

Implementation of the CUP Expansion Project would require a marginal increase in use of water for domestic and fire purposes compared to what was previously analyzed in the 2020 LRDP Update SEIR and evaluated in the 2019 Utility Master Plan (Affiliated Engineers, Inc. 2022). The new CUP Annex would be connected to the existing service hub with a new water line and backflow

preventer. This would take place within the Sacramento Campus boundary and no additional domestic service lines would be installed. Fire water would also be supplied through a connection to the existing source within the campus boundary.

The existing water infrastructure within the Sacramento Campus that serves the CUP would remain and continue to provide distribution. The project would make new connections to the existing water lines and install new infrastructure within the site to serve the new and existing uses. The CUP also would continue to distribute water to other areas of the campus using the existing water distribution network and no offsite improvements would be required. As described in the 2022 Utility Master Plan, the existing water systems have sufficient supply to meet the increased demand associated with future campus improvements (Affiliated Engineers, Inc. 2022). Therefore, impacts related to both on-campus and off-campus water systems would be **less than significant**, and mitigation is not required. The project would not result in a more severe significant impact compared to what was previously evaluated in the 2020 LRDP Update SEIR.

Wastewater and Stormwater

Implementation of the CUP Expansion Project would not result in the generation of substantial volumes of wastewater or stormwater such that any new wastewater treatment or stormwater facilities are required. The majority of the campus is served by an existing network of combined sewer and stormwater facilities, as is the project site. Wastewater and stormwater are carried from these areas to existing public treatment plants and offsite stormwater drainage facilities using existing infrastructure. No new offsite infrastructure would be required for treatment. The project would add 12 new employees over time, which would constitute a negligible increase in water and wastewater use at the site.

Lastly, the project would not result in a substantial increase in impermeable surfaces that would result in generation of additional stormwater requiring new offsite stormwater facilities. As described in Section 3.9, impervious surface areas are assumed to increase slightly compared to existing conditions. Excess stormwater would continue to be detained on site before it is released to the receiving waterbody, reducing peak flows that could result in downstream flooding. A Water Action Plan would provide practices to prevent stormwater pollution during operation, as required by University of California Sustainable Practices Policy procedures for stormwater management. Stormwater runoff flows would be more accurately determined once the conceptual landscaping and paving plan is finalized. In addition, during site development, storm drainpipe segments would be studied for capacity and potential upsizing or hydraulic grade line considerations on the affected site (Affiliated Engineers, Inc. 2022). Consequently, impacts would be **less than significant**, and mitigation is not required. The project would not result in a more severe significant impact compared to what was previously evaluated in the 2020 LRDP Update SEIR.

Natural Gas

Natural gas is provided to the CUP site by PG&E via an existing gas main from 49th Street and is split within the site to the existing gas turbines in the cogeneration system and the auxiliary boilers. Natural gas within the CUP is used for heating, chilled water production, and the production of electricity. Natural gas consumption would be reduced as a result of the CUP Expansion Project, as the existing turbine and four steam boilers would be modified. The existing combined cooling, heating, and power plant gas-turbine; heat recovery steam generator; and steam turbine cogeneration systems would be shut down. While the natural gas–fired turbine would be retained as a backup electrical generation source, demand for natural gas would decline. In addition, the plant

would be converted to a central chilled water heat recovery plant utilizing heat pump chillers as well as hot and cold thermal energy storage tanks to meet the campus base heating and cooling loads.

No new offsite natural gas lines would be needed, and all work on the existing lines within the CUP site would occur as part of other construction activities within the existing CUP project footprint. Therefore, the project would not result in any impacts associated with the need for new natural gas infrastructure, the construction of which could have an impact on the environment. Impacts would be **less than significant**, and mitigation is not required. The project would not result in a more severe significant impact compared to what was previously evaluated in the 2020 LRDP Update SEIR.

Electricity

The long-term plan for CUP modernization is to eliminate dependence on the natural gas and steam turbines for primary energy production and transition to electrical power from SMUD. This would require onsite as well as offsite expansion of the power service. Although the CUP would retain and modify existing utility infrastructure, a new electrical line and transformer at the existing SMUD East City Substation would be required. Extension of the utilities would extend via one of two routes between SMUD's East City Substation and the new electrical service yard at the CUP. Within the CUP, a new electrical service yard would be installed to house electrical service equipment.

Although the 2020 LRDP Update SEIR did not consider the installation of a new feeder from SMUD, all improvements would occur within heavily disturbed areas, existing roadways, and railroad right-of-way, all of which are heavily disturbed and in highly urbanized areas. In addition, the project would not negatively affect the provision of utilities to existing and future uses in the project area. The project is intended to ensure continued and reliable electrical service within the CUP.

All work on the new lines would be within the existing SMUD service boundaries that contain existing utilities including electrical service lines; associated impacts are discussed within the respective chapters of this EIR. Furthermore, no new structures would be required or constructed as part of the project and all needed improvements would be installed per National Electrical Code and California Electrical Code standards. Therefore, impacts would remain **less than significant**, and mitigation is not required. The project would not result in a more severe significant impact compared to what was previously evaluated in the 2020 LRDP Update SEIR.

Telecommunications

The UC Davis Sacramento Campus owns and operates its own telecommunications infrastructure (i.e., telecommunications lines and conduits, utility boxes, and electronic equipment in existing buildings). The Utility Master Plan (2019) concluded that the telecommunications conduit infrastructure and campus fiber backbone ring have sufficient capacity for campus load growth through year 2035 buildout. The project includes upgrades to the existing CUP and does not include uses that would require a substantial new demand on the existing telecommunications systems such that any offsite improvements would be needed. Any improvements or connections to the existing network would occur within the existing CUP project footprint. Therefore, the impact would be **less than significant**, and mitigation is not required. The project would not result in a more severe significant impact compared to what was previously evaluated in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation is required.

Impact UT-2: Creation of a need for new or expanded entitlements or resources for sufficient water supply to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years

Summary of Impact UT-2 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	No	-
CUP Expansion	LTS	No	-
SMUD Component	LTS	No	-
Whole project	LTS	No	-

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that while implementation of the 2020 LRDP Update would increase demand for water, the campus is served by adequate supply and has adequate infrastructure to accommodate the projected demand. The impacts were determined to be less than significant.

CUP Expansion Project Impacts

The CUP Expansion Project would require the supply of more water than what was originally anticipated in the 2020 LRDP. Initially, water would be needed during the construction phases, such as for dust control for the project. A minimal volume of additional water would be needed during operation of the new industrial components such as for cooling, new boilers, and potable water within the new structures and Annex building.

The City of Sacramento's annual water supply is 326,800-acre feet per year (afy) or 106,488,246,857 gallons (City of Sacramento 2015). Previous evaluation for improvements to the campus in the 2020 LRDP Update SEIR anticipated annual water demand for the then-anticipated improvements, including those to the CUP, of approximately 51 million gallons per year (mgpy) or 156.5 afy (Affiliated Engineers, Inc. 2019). The CUP Expansion Project would require approximately 53 mgpy, or 162.7 afy of water (Affiliated Engineers, Inc. 2022).

The CUP Expansion Project represents an increase in 2 mgpy of water demand compared to what was evaluated in the 2020 LRDP Update SEIR. It should be noted that 2 million gallons equates to approximately 4 percent of the water demand for the CUP evaluated in the 2020 LRDP Update SEIR. Additionally, compared to the total anticipated water demand campus-wide for year 2040, the increase is approximately 0.6 percent (260,483,018 gallons of potable and 70,520,479 non-potable water) (Affiliated Engineers, Inc. 2019:1-11).

Related to water infrastructure, no additional water lines are needed outside of the CUP project area. While the project would require construction and use of some new onsite water infrastructure,

the site is already heavily disturbed, consists of the existing CUP and associated uses, and would not cause any offsite disturbances from water line installation resulting in impacts on the environment.

For these reasons, the increased water demand would not result in the need for the City of Sacramento to obtain additional entitlements or expand existing water infrastructure. This impact would be **less than significant**, and no mitigation is required. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation is required.

Impact UT-3: A determination by the wastewater treatment provider that serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments

Summary of Impact UT-3 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	No	-
CUP Expansion	LTS	No	-
SMUD Component	LTS	No	-
Whole project	LTS	No	-

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that while implementation of the 2020 LRDP Update would increase demand for wastewater, the campus and treatment plants have adequate facilities to accommodate the projected demand, and the impact was determined to be less than significant.

CUP Expansion Project Impacts

As stated in the 2020 LRDP Update, the majority of the campus is served by a network of combined sewer lines and infrastructure maintained by the City of Sacramento to convey storm sewage and sanitary sewage from the campus to public wastewater treatment plants. The 2020 LRDP Update also discusses the need for wastewater upgrades, new lines, and new facilities to enable service within the UC campus and noted that existing and anticipated wastewater treatment facilities were adequate. Sanitary sewer demands are assumed to be directly proportional to water demands, with sewer flows at 95 percent of the demand levels of domestic water flows.

While the 2020 LRDP Update notes that there are other areas within the campus that would require wastewater improvements, the CUP has no planned expansion of facilities and future wastewater piping is not planned for the zone. The CUP improvements, however, do include a new Annex building and other uses that could slightly increase needs for wastewater disposal. All such improvements, however, would occur and tie into existing wastewater infrastructure within the existing CUP site. None of this work would cause any offsite disturbances that could result in impacts on the environment. Wastewater would continue to be treated at offsite treatment plants,

which have adequate capacity to serve the project. Lastly, all improvements and construction of wastewater infrastructure within the CUP site would adhere to existing laws and regulations and City of Sacramento standards related to disposal of wastewater.

The onsite improvements and potential for an incrementally small increased demand for wastewater disposal would not result in the need for UC Davis or the City of Sacramento to obtain additional entitlements or expand existing wastewater infrastructure This impact would be **less than significant**, and no mitigation is required. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation is required.

Impact UT-4: Project-related exceedance of State or local solid waste standards or of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals

Summary of Impact UT-4 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	No	-
CUP Expansion	LTS	No	-
SMUD Component	LTS	No	-
Whole project	LTS	No	-

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that while implementation of the 2020 LRDP Update would increase demand for solid waste disposal, the existing disposal facilities that would serve the project have adequate capacity to accommodate the projected demand, and the impact was determined to be less than significant.

CUP Expansion Project Impacts

Implementation of the CUP Expansion Project would result in a small increase in the generation of solid waste. Demolition and construction debris could include asphalt, concrete, scrap lumber, finishing materials, metals, and organic materials. Demolition and construction would result in a temporary and small increase in waste generation during these phases including work needed to complete the connection to the SMUD substation. Debris generated during operations would be the same and of similar volumes to what is generated as for current operations.

Similar to existing conditions and site operations, all nonrecycled and nonhazardous solid wastes would be initially transported to the Republic Services Elder Creek Transfer Station in Sacramento and then to the Forward Landfill in Manteca. The Forward Landfill has a total remaining capacity daily capacity of 8,668 tons per day (tpd), remaining capacity of 24,720,669 tpd, and maximum permitted capacity of 59,160,00 tpd and closure date of January 2036. When the Forward Landfill is

closed, it is anticipated that waste from the campus, including the CUP, would be disposed of at the Foothill Landfill in San Joaquin County.

Modernization of the CUP would not result in generation of a substantial volume of waste. The project would not increase the population of the campus or result in traditionally higher volumes of waste-generating uses such as residential or commercial. Additionally, the University of California has adopted the Sustainable Practices Policy, which sets goals to reduce waste generation, encourages recycling of construction waste, and sets forth a new recycling program. Together, these policies would minimize the amount of solid waste that would go to Forward Landfill in Manteca.

Lastly, as stated in the 2020 LRDP Update SEIR, eventual transfer of disposal service, if needed, to the Foothill landfill would ensure adequate service capacity for the campus disposal needs. Therefore, impacts would remain **less than significant**, and mitigation is not required. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation is required.

Impact UT-5: Inconsistency with federal, State, and local management and reduction statutes and regulations related to solid waste

Summary of Impact UT-5 by Component

Component	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
Make-ready projects	LTS	No	-
CUP Expansion	LTS	No	-
SMUD Component	LTS	No	-
Whole project	LTS	No	-

LTS = less than significant

Impacts Identified in the 2020 LRDP Update SEIR

The 2020 LRDP Update SEIR concluded that implementation of the 2020 LRDP Update would comply with all applicable federal, State, and local management requirements related to the disposal of solid waste. The impacts were determined to be less than significant.

CUP Expansion Project Impacts

The project would generate a small amount of solid waste during construction including asphalt, concrete, scrap lumber, finishing materials, metals, and organic materials. Compliance with the current CALGreen and City and county requirements would result in a reduction of construction waste and demolition debris. The minor increase in solid waste generated by the CUP Expansion Project is anticipated to be disposed of at the Forward Landfill in Manteca through the year 2036, and then transferred to another disposal site such as the Foothill Landfill. Although the University is not subject to State and local regulations related to solid waste, waste generated by the project would be handled and disposed of in accordance with the Sustainable Practices Policy. This guidance

sets ambitious waste reduction targets and encourages waste reduction and diversion programs. The policy also is consistent with management and reduction regulations related to solid waste, such as AB 939, AB 341, Senate Bill 1374, and AB 1826. Installation of the new utility line to the SMUD substation would comply with the above, as well as the current CALGreen and City and county requirements.

The project would not result in any conflicts with a federal, State, or local management regulation related to solid waste. Impacts would be **less than significant**, and no mitigation is required. The project would not result in a new or more severe significant impact than previously disclosed in the 2020 LRDP Update SEIR.

Mitigation Measures

No mitigation is required.

Chapter 4
Alternatives

4.1 Introduction

Environmental impact reports (EIRs) must consider alternatives to a proposed project that could substantially reduce or avoid significant environmental impacts. Section 15126.6(b) of the California Environmental Quality Act (CEQA) Guidelines states the following:

> Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Pub. Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

Section 15126.6(a) of the CEQA Guidelines requires EIRs to describe the following:

> ... a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.

See also CEQA Guidelines Section 15126.6[f].

The CEQA Guidelines require an EIR to include enough information about each alternative to allow meaningful evaluation, analysis, and comparison with the project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project, the significant effects of the alternative must be discussed but in less detail than the significant effects of the project as proposed (CEQA Guidelines Section 15126.6[d]). The CEQA Guidelines further require consideration of a "no project" alternative (per CEQA Guidelines Section 15126.6[e]).

In defining "feasibility" (i.e., "... feasibly attain most of the basic objectives of the project ..."), CEQA Guidelines Section 15126.6(f) (1) states, in part, the following:

> Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

4.2 Project Overview

The components of the Central Utility Plant (CUP) Expansion Project include both make-ready projects as well as construction and operational components associated with CUP expansion. The components include make-ready projects, the CUP Expansion, and a new SMUD feeder route from

SMUD's East City Substation to the CUP. The project components are described in detail in Chapter 2 and are shown in Figures 2-3, 2-4 and 2-5a and 2-5b.

4.2.1 Project Objectives

UC Davis has identified the following objectives for the proposed CUP Expansion Project:

- Increase the resiliency of utilities in the event of a utility outage to maintain care for the community in the Sacramento region.
- Comply with Health-Care Access and Information (HCAI) standards and requirements for health-care facilities.
- Provide the utility load needed for campus growth, including the California Hospital Tower and 48X Complex.
- Accommodate campus growth through 2035.
- Further campus compliance with the UC Sustainable Practices Policy, including initiation of development of a more efficient operating utility plant to reduce GHGs and set the Sacramento Campus on a path to carbon-free operations.
- Demolish outdated spaces to achieve seismic safety and remove buildings that cannot be operated efficiently or renovated.

4.3 Significant and Unavoidable Impacts

According to CEQA Guidelines Section 15126.6, an EIR must describe a range of reasonable alternatives to a project, or the location of a project, that would feasibly attain most of the basic objectives of the project but avoid or substantially lessen any of the significant effects of the project. It must also evaluate the comparative merits of the alternatives.

Implementation of the CUP Expansion Project would result in one significant and unavoidable environmental impact related to construction-related noise.

The following impact has been identified as significant and unavoidable with implementation of all feasible mitigation measures:

- Impact LRDP-NOI-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from construction activities in excess of applicable standards

4.4 Alternatives Considered but Dismissed

In addition to factors described previously, the CEQA Guidelines state that an EIR should also identify any alternatives that were considered by the lead agency but rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination. This section addresses those alternatives.

Several mechanical CUP options (i.e., alternatives) were developed as part of the Utility Master Plan Update (Affiliated Engineers, Inc. 2022). The options are summarized below. The Business-as-Usual

Alternative that was considered in the Utility Master Plan Update is discussed in Section 4.5.1 as the No-Project Alternative. Due to California Department of Health Care Access and Information (HCAI) restrictions, off-site locations would be infeasible.

- **New Clinical Satellite Heat Recovery Plant Alternative (Continued Cogeneration with Existing Plant)**. The concept for this alternative involves an all-electric satellite central energy plant at the north end of the campus. The plant would be designed as a chilled-water heat recovery plant to serve Clinical and Hospital loads, which are primarily in the north campus area. The primary goal of this option is to avoid increasing campus-related direct carbon emissions over and above existing levels. Without the new satellite, increased combined cooling, heat, and power (CCHP) plant heating and cooling loads would result in increased gas turbine power levels and an associated significant increase in fuel use and carbon emissions. The north satellite central plant would account for all campus load growth over and above existing campus thermal loads in the Clinical zone of the campus.

  The north chilled-water heat recovery plant would be designed to provide needed campus cooling and heating capacity, over and above current loads. A separate hot-water distribution system would be installed at the north area of the campus, serving north-area hospital and medical-building loads. The north hot-water distribution system would be separate from the existing campus hot-water loop and operate at a much lower temperature compared to the existing system for overall heat recovery-system energy efficiency. The campus would continue to operate the existing CCHP cogeneration plant, without adding equipment for future campus capacity needs. The existing cogeneration plant would continue to operate until the end of its life. Then, an all-electric replacement plant of equivalent capacity would need to be built. This option would require one new cooling tower and five emergency generators.

  This alternative would reduce the construction noise effects of the project on an existing elementary school, which is the closest sensitive receptor to the CUP site, and reduce the significant and unavoidable impact of the project related to construction noise effects on sensitive receptors on campus to a less-than-significant level. It would not reduce the significant and unavoidable impacts of the project related to the construction noise effects of the SMUD facilities.

  This alternative was not selected for multiple reasons. Primarily, this option would be located near residents along V Street in the Elmhurst neighborhood, which would result in more severe impacts related to aesthetics, air quality and associated health risks, and noise. In addition, this option would serve only the main hospital; the proposed project is intended to serve the majority of the Sacramento Campus. The cost of running two plants would increase, and additional personnel would be required. Furthermore, it would have a large physical footprint, which could result in spacing issues that would conflict with some of the goals of the 2020 Long-Range Development Plan (LRDP) Update, such as appropriate facility adjacencies.

  Because this alternative would not be consistent with UC policies, including the LRDP, and because it would result in greater impacts compared with the proposed project, this alternative was dismissed and not carried forward in the analysis in this EIR.

- **Electric Boilers with No TES Tanks Alternative**. The concept of this alternative is to shut down the existing CCHP cogeneration plant and convert it to a central chilled-water heat recovery plant with supplemental chillers and peaking electric boilers. Thermal energy storage (TES) for chilled water and hot water was not included for this option because of the potentially limited availability of land for large TES tanks.

Under this alternative, an annex central plant building would need to be constructed in the vicinity of the existing CCHP facility because the existing facility does not have adequate space for the equipment that would be needed. The annex central plant building would contain the heat recovery chillers, electric hot-water boilers, electrical switchgear, substations, larger emergency generators, and diesel fuel storage and related auxiliary mechanical/electrical equipment. Once overall conversion of the central plant is completed, the annex CUP would function as the heating plant for the campus; the existing CCHP facility would function as the cooling plant for the campus.

This alternative would have a smaller footprint than the proposed project, which would reduce some construction-related impacts. It would also reduce GHG emissions because it would be all electric. However, this alternative would not meet campus demand. Because this alternative would not meet project objectives (e.g., campus demand), it was dismissed and not carried forward in the analysis.

- **Gas Turbine Heat Load Following with No TES Tanks Alternative**. Under this alternative, the existing CCHP cogeneration plant would continue operating, with a change in operation from electrical load following to heat load following. Most of the electricity would be purchased from SMUD. Plant capacity would be added as needed to cover campus long-range load growth. Although this alternative would have a smaller footprint than the proposed project, it would not meet campus demand with current technology and would be infeasible for engineering reasons.

  Because this alternative would not meet project objectives, and would be infeasible, this alternative was dismissed and not carried forward in the analysis in this EIR.

4.5 Alternatives Considered in Detail

The alternatives below were considered for the CUP Expansion Project.

Alternative 1: No Project. Under the No-Project Alternative, the CUP Expansion Project would not be constructed, and the CUP would continue operating the existing CCHP cogeneration plant.

Alternative 2: New Non-Clinical Satellite Heat Recovery Plant (Continued Cogeneration with Existing Plant). The plant concept for Alternative 2 is similar to that of the New Clinical Satellite Heat Recovery Plant Alternative described above; however, the new all-electric satellite central plant would be smaller with respect to capacity, non-Clinical, and located in the campus education core area north of Parking Lot 17. Only existing and new non-medically related buildings, such as teaching facilities, laboratory facilities, and administrative offices, would be served by this plant. The existing CCHP plant would continue to serve the greater campus and associated HCAI loads. This option would reduce future campus-related direct carbon emissions but not to the level offered by the proposed project. Net increases in CCHP plant heating and cooling loads would result in increased gas turbine power levels and an associated increase in fuel use and carbon emissions.

Campus core thermal loads from existing buildings would be removed from the existing CCHP plant; however, overall long-term campus growth would require heating and cooling capacity additions at the CCHP plant. The campus would continue operating the existing CCHP cogeneration plant until the end of its life. Then, an all-electric replacement plant of equivalent capacity would need to be built. This alternative would reduce the construction noise effects of the project on the existing elementary school, which is the closest sensitive receptor to the CUP site, and reduce the significant

and unavoidable impact of the project related to construction noise effects on sensitive receptors on campus to a less-than-significant level.

4.5.1 Evaluation of Alternatives

Alternative 1: No Project

Under the No-Project Alternative, the CUP would continue to provide all of the campus' normal power, chilled and hot water for heating and cooling, and process steam to most campus buildings, which use natural gas provided by Pacific Gas and Electric (PG&E). Emergency power would continue to be provided by diesel generators at the CUP. The analysis here assumes the continuation of existing conditions at the CUP and that adding capacity, as described above, would not add equipment to the site or increase operations or staffing at the site.

Aesthetics

The No-Project Alternative assumes that the CUP would remain in its current condition visually. The aesthetic impacts of the project, including impacts on visual character and quality, would not occur with the No-Project Alternative. Therefore, new visual impacts would not occur under the No-Project Alternative. (Less Impact)

Air Quality

Temporary construction impacts on air quality under the No-Project Alternative would be less than those under the proposed CUP Expansion Project. There would be no ground-disturbing or other construction activities and thus no potential to generate short-term emissions or expose receptors to substantial pollutant concentrations or health risks. Under the No-Project Alternative, existing operations at the CUP would increase commensurate with the additional building load from buildout of the LRDP Update. The new boilers at the CUP Annex would not be installed, and thus, campus power and heating and cooling needs would continue to be provided through natural gas combustion at the existing CUP boilers and turbine. The existing boilers are less efficient and more pollutant intensive than the new boilers that would be installed at the CUP Annex. Also, because the necessary infrastructure needed to electrify campus operations would not be installed under the No-Project Alternative, a greater percentage of power would be provided through natural gas combustion instead of through electrical power from SMUD, which has no direct emissions. Consequently, although there would be reduced construction emissions, the No-Project Alternative would result in increased operational emissions and associated impacts compared to the proposed project. (Greater Impact)

Biological Resources

Under the No-Project Alternative, the CUP would remain in its current condition, and no trees would be removed. No construction would occur that would necessitate potential disturbance of species such as nesting birds or bats. Therefore, there would be no new impacts on sensitive biological resources. (Less Impact)

Archaeological, Historical, and Tribal Cultural Resources

Under the No-Project Alternative, the CUP would remain in its current condition. There would be no changes at the CUP site and no additional ground-disturbing activity that would result in the

potential discovery of archaeological resources. Therefore, there would be no new impacts on archeological, historical, or tribal cultural resources. (Less Impact)

Energy

The temporary impacts on energy under the No-Project Alternative would be less than those under the CUP Expansion Project. There would be no ground disturbance or other construction activities and thus no use of energy. Under the No-Project Alternative, existing operations at the CUP would increase commensurate with the additional building load from buildout of the LRDP Update. The new boilers at the CUP Annex would not be installed, and thus, campus power and heating and cooling needs would continue to be provided through natural gas combustion at the existing CUP boilers and turbine. The existing boilers are less efficient than the new boilers that would be installed at the CUP Annex. Also, because the necessary infrastructure needed to electrify campus operations would not be installed under the No-Project Alternative, a greater percentage of power would be provided through natural gas combustion instead of through electrical power from SMUD, which would be in the form of clean energy. Consequently, although there would be no new temporary energy impacts from the No-Project Alternative, the long-term goals of the campus would not be achieved and future phases of CUP modernization would not take place, resulting in less efficient operational energy use than with the project. (Greater Impact)

Geology, Soils, and Seismicity

Under the No-Project Alternative, there would be no changes to the CUP. The CUP site would continue in its current state. No earth-moving activities associated with construction would affect geology and soils; therefore, there would be no new impacts related to geology, soils, and seismicity. (Less Impact)

Greenhouse Gas Emissions

The short-term impacts on GHG emissions under the No-Project Alternative would be less than those with the CUP Expansion Project. There would be no ground disturbance or other construction activities and thus no potential to generate short-term emissions. Under the No-Project Alternative, existing operations at the CUP would increase commensurate with the additional building load from buildout of the LRDP Update. The new boilers at the CUP Annex would not be installed, and thus, campus power and heating and cooling needs would continue to be provided through natural gas combustion at the existing CUP boilers and turbine. The existing boilers are less efficient and more pollutant intensive than the new boilers that would be installed at the CUP Annex. Also, because the necessary infrastructure needed to electrify campus operations would not be installed under the No-Project Alternative, a greater percentage of power would be provided through natural gas combustion instead of through electrical power from SMUD, which has no direct GHG emissions. Consequently, although there would be reduced construction emissions from the No-Project Alternative, the long-term goals of the campus would not be achieved and future phases of CUP modernization and decarbonization would not take place. Thus, the No-Project Alternative would result in increased operational GHG emissions and associated impacts compared to the proposed project. (Greater Impact)

Hazards and Hazardous Materials

The impacts related to hazards and hazardous materials under the No-Project Alternative would be less than those under the CUP Expansion Project. There would be no ground-disturbing activities, which would lead to fewer overall construction impacts related to the potential for hazardous material releases compared to the project. The risk to construction workers from exposure to soil and/or groundwater contaminants would be less under the No-Project Alternative than under the project because no construction is proposed.

The No-Project Alternative would not include construction of any make-ready projects or annex buildings that might lead to an increase in the use and transport of hazardous materials. Risks to University personnel and the general public related to encountering hazardous materials would be slightly less under the No-Project Alternative than under the CUP Expansion Project because there would be fewer facilities requiring the transport of hazardous materials.

The No-Project Alternative would not require temporary traffic controls, detours, or any change in flightpaths and would not be expected to result in significant impacts on emergency response or evacuation plans. It is expected that impacts would still be less than significant because the campus would continue to comply with the provisions of the *Emergency Action & Evacuation Plan* (UC Davis Health Education & Research 2019). (Less Impact)

Hydrology and Water Quality

Under the No-Project Alternative, there would be no changes to the CUP. The CUP site would remain in its current state. There would be no changes to drainage or water usage. There would be no new impervious surface or other impacts related to hydrology and water quality. (Less Impact)

Land Use and Planning

Under the No-Project Alternative, there would be no changes associated with existing land use and planning. The No-Project Alternative would involve continued operation of the CUP in its current state, and a minor land use amendment would not be required. The potential for impacts would be less under the No-Project Alternative because there would not be the potential for land use conflicts between new and existing land uses. (Less Impact)

Noise

The impacts related to noise and vibration under the No-Project Alternative would be less than those under the CUP Expansion Project. Under the No-Project Alternative, existing operations at the CUP would increase commensurate with the additional building load from buildout of the LRDP Update Therefore, under the No-Project Alternative, there would be some new impacts related to noise and vibration in the event that new equipment is required in the future. (Less Impact)

Population and Housing

Under the No-Project Alternative, there would be no changes to the CUP that would increase employment. The CUP site would remain in its current state. Therefore, there would be no impacts related to population and housing under the No-Project Alternative. (Less Impact)

Public Services

Under the No-Project Alternative, there would be no changes to the CUP that would increase demand for public services. The CUP site would remain in its current state, with no additional employees. There would be no changes in public services. (Similar Impact)

Recreation

Under the No-Project Alternative, recreational uses on campus, which are mainly passive (e.g., walking paths and benches), would remain the same. There would be no new population that would increase the use of recreational facilities. The PS6 driveway would not require construction next to the campus major open space. However, this would not represent a large change compared with existing conditions. (Less Impact)

Transportation and Circulation

Under the No-Project Alternative, there would be no changes to the CUP and no roadway improvements associated with PS6; therefore, there would be no transportation/circulation changes. Overall transportation and circulation impacts would be less under the No-Project Alternative than the CUP Expansion Project. (Less Impact)

Utilities and Service Systems

Under the No-Project Alternative, there would be no changes to the CUP and no associated utility improvements. Water and energy use would not increase, and there would be no changes to the existing stormwater drainage system. (Less Impact)

Alternative 2: New Non-Clinical Satellite Heat Recovery Plant (Continued Cogeneration with Existing Plant).

Under Alternative 2, the existing CCHP plant gas turbine, heat recovery steam generator, and steam turbine would continue existing operations without a load increase and a new all-electric satellite plant would be constructed in the campus education core area a substantial distance north of the existing CUP. This satellite plant would serve existing and new non-medically related buildings, such as teaching facilities, laboratories, and administrative office buildings, while the existing CCHP plant would continue to serve the greater campus. The loads on the existing CCHP plant would increase, and power for the new satellite plant would be provided by a new transmission line from SMUD.

Aesthetics

Alternative 2 would have impacts similar to those of the proposed project. Construction of the satellite plant would be internal to the campus in the “Education, Research, & Housing” land use category and would not affect the neighborhoods that surround the Sacramento Campus. Primary viewer groups would be medical center employees, visitors, and roadway travelers. Construction of the SMUD feeder would result in temporary impacts on residential viewer groups, similar to those described for the proposed project. This evaluation assumes that Mitigation Measures LRDP-AES-2b, LRDP-AES-2c, and LRDP-AES-2d would be required and implemented for Alternative 2. Therefore, Alternative 2 would reduce visual effects to a less-than-significant level with implementation of the mitigation measures above regarding visual quality, visual character, and light and glare. (Similar Impact)

Air Quality

The types of air quality impacts under Alternative 2 would be similar to those described for the proposed project. Construction of Alternative 2 could generate nitrogen oxide (NO_X) emissions that exceed the Sacramento Metropolitan Air Quality Management District's (SMAQMD's) significance thresholds. As with the proposed project, Mitigation Measures LRDP-AQ-2a through LRDP-AQ-2d would reduce construction emissions to less than significant with mitigation.

Long-term operational emissions would be greater than under the proposed project. The new boilers at the CUP Annex would not be installed, and thus, power and heating and cooling needs for the campus medical buildings would continue to be provided through natural gas combustion at the existing CUP boilers and turbine. The existing boilers are less efficient and more pollutant intensive than the new boilers that would be installed at the CUP Annex. Furthermore, having two plants on campus would be less efficient. Consequently, although there would be similar construction emissions, Alternative 2 would result in increased operational emissions and associated impacts compared to the proposed project. (Greater Impact)

Biological Resources

Under Alternative 2, uses at the existing CUP would continue to serve the medical buildings on campus; a new satellite plant would be built in the campus educational core (north of Parking Lot 17) to serve the non-medical buildings on campus. Alternative 2 would have a larger construction footprint than the proposed project. Because the proposed extent of ground disturbance under Alternative 2 would be greater than that of the proposed project, impacts under Alternative 2 on vegetation-nesting migratory birds and raptors, as well as protected trees, would be greater. (Greater Impact)

Archaeological, Historical, and Tribal Cultural Resources

Under Alternative 2, uses at the existing CUP would continue to serve the medical buildings on campus; a new satellite plant would be built in the campus educational core (north of Parking Lot 17) to serve the non-medical buildings on campus. Alternative 2 would have a larger construction footprint than the proposed project. Because the proposed extent of ground disturbance under Alternative 2 would be greater than the proposed project, impacts under Alternative 2 would result in more ground disturbance and increase the potential to encounter unanticipated archaeological resources. The satellite campus would also be closer to a historic graveyard than the proposed project. (Greater Impact)

Energy

The temporary impacts on energy under Alternative 2 would be similar to those under the CUP Expansion Project. Under Alternative 2, existing operations at the CUP would continue to serve the medical buildings on campus; a new satellite plant would serve the non-medical buildings on campus. The new boilers at the CUP Annex would not be installed, and thus, campus power and heating and cooling needs would continue to be provided through natural gas combustion at the existing CUP boilers and turbine. The existing boilers are less efficient than the new boilers that would be installed at the CUP Annex. Also, because the necessary infrastructure needed to electrify campus operations would not be installed under Alternative 2, a greater percentage of power would be provided through natural gas combustion instead of through electrical power from SMUD, which would be in the form of clean energy. Consequently, although there would be no new temporary

energy impacts from Alternative 2, the long-term goals of the campus would not be achieved and future phases of CUP modernization would not take place, resulting in less efficient operational energy use than with the project. Alternative 2 would not meet the University's goal to achieve an 80 percent reduction in onsite natural gas combustion and would have lower electrical reliability as well. (Greater Impact)

Geology, Soils, and Seismicity

Earthmoving activities associated with construction of Alternative 2 would have the potential to affect geology and soils. The types of impacts that could occur from development of the satellite plant in the campus' central education core include geotechnical issues, increased erosion, and exposure of buildings and people to seismic hazards. Existing regulations and permitting requirements, such as California Building Code (CBC) requirements, National Pollutant Discharge Elimination System (NPDES) permit conditions, and best management practices (BMPs), would reduce potentially significant impacts to a less-than-significant level. This alternative would have a greater footprint compared to the proposed project; thus, impacts would be of a similar type but slightly greater in magnitude. (Greater Impact)

Greenhouse Gas Emissions

The short-term impacts on GHG emissions under Alternative 2 would be similar to those with the CUP Expansion Project. Under Alternative 2, the new boilers at the CUP Annex would not be installed, and thus, campus power and heating and cooling needs for the medical buildings would continue to be provided through natural gas combustion at the existing CUP boilers and turbine. The existing boilers are less efficient and more pollutant intensive than the new boilers that would be installed at the CUP Annex. Also, because the necessary infrastructure needed to electrify campus operations would not be installed under Alternative 2, a greater percentage of power would be provided through natural gas combustion instead of through electrical power from SMUD, which has no direct GHG emissions. Consequently, although there would be similar construction emissions from Alternative 2, the long-term goals of the campus would not be achieved, including the goal to reduce onsite natural gas combustion by 80 percent. Thus, Alternative 2 would result in increased operational GHG emissions and associated impacts compared to the proposed project. (Greater Impact)

Hazards and Hazardous Materials

The impacts related to hazards and hazardous materials under Alternative 2 would be similar to those under the CUP Expansion Project. As with the proposed project, ground-disturbing activities, the construction of new buildings, and installation of new equipment could result in construction impacts related to the potential for hazardous material releases.

Alternative 2 would not be expected to result in significant impacts on emergency response or evacuation plans, similar to the proposed project. It is expected that impacts would still be less than significant because the campus would continue to comply with the provisions of the *Emergency Action & Evacuation Plan* (UC Davis Health Education & Research 2019). (Similar Impact)

Hydrology and Water Quality

Earthmoving activities associated with Alternative 2 would have the potential to affect hydrology and water quality on the project site. The construction footprint of Alternative 2 would be larger

than that of the proposed project, which would result in greater ground disturbance and potentially greater impervious surface area. The types of impacts that could occur from development under the Alternative 2 include adverse effects on water quality, reduced groundwater recharge, and alterations to existing drainage systems. Existing regulations and permitting requirement, such as NPDES permit conditions and a stormwater pollution prevention plan, would reduce potentially significant impacts to a less-than-significant level. In addition, development of additional "Education, Research, and Housing" space would be required to comply with existing regulations to reduce impacts to a less-than-significant level. Because the alternative would require a larger footprint for development, the severity of impacts would be greater compared to the proposed project. (Greater Impact)

Land Use and Planning

Implementation of Alternative 2 would require a land use amendment to convert "Education, Research, and Housing" land use to "Support" space. The footprint of Alternative 2 would be larger than that of the proposed project and thus would result in a larger land use amendment. In addition, the two central plants would be located apart from each other, requiring duplication of staff and a reduction in the efficiency of building adjacencies (Greater Impact)

Noise

Construction-related noise and vibration impacts under Alternative 2 would be similar to those described for the CUP Expansion Project. There would be construction impacts both on the Sacramento Campus and in residential areas where the SMUD transmission line would be installed. Construction impacts on the existing nearest sensitive receptor, the elementary school, would be reduced somewhat because the distance to the school from the new construction would be more than 750 feet (instead of approximately 300 feet under the project). Similarly, noise impacts from construction on the Kiwanis Family House and the Ronald McDonald House would also be reduced somewhat because construction would occur more than 1,700 feet and 1,100 feet from the Kiwanis Family House and Ronald McDonald House, respectively (compared to approximately 1,100 feet and 715 feet, respectively, under the project). Although the impact would be reduced somewhat, should construction occur outside of the exempt daytime hours in Sacramento, construction noise impacts would still be potentially significant at these receptors. The distance from the Alternative 2 location to the nearest offsite single-family residences would be similar to that under the project. Although the location for Alternative 2 would be near an area designated in the LRDP for future residential uses, it is anticipated that project construction would be complete prior to any future residential project at that site being proposed, constructed, and occupied.

There may be greater operational sources of noise under Alternative 2 because additional noise-generating equipment would be operating at two separate locations on the Sacramento Campus, which would introduce new sources of operational noise in the campus educational core. For these reasons, implementation of Alternative 2 would reduce the specific construction noise impact of the proposed project on the several nearby sensitive receptors (e.g., Kiwanis Family House, Ronald McDonald House, Language Academy of Sacramento) but could result in greater operational noise impacts compared to the proposed project. However, implementation of noise reduction measures for operational noise could reduce such impacts. (Lesser Impact)

Population and Housing

Alternative 2 would require the operation of two plants, the existing CUP and the new satellite plant. This could result in additional staff compared to the proposed project and thus a slightly greater impact. (Greater Impact)

Public Services

Alternative 2 would require the operation of two plants, the existing CUP and the new satellite plant. This could result in additional staff compared to the proposed project; however, the need for additional public service is not anticipated. (Similar Impact)

Recreation

Under Alternative 2, recreational uses on campus, which are mainly passive (e.g., walking paths and benches), would remain similar to those of the proposed project. There would be need for additional personnel to operate the new plant but not to an extent that would increase the use of recreational facilities. The PS6 driveway would not require construction next to the campus major open space. However, this would not represent a large change compared with existing conditions. (Similar Impact)

Transportation and Circulation

Under Alternative 2, there would be no transportation or circulation changes to the existing CUP and no roadway improvements associated with PS6. However, the new satellite plant would be located in the central campus education core, which is already congested. This would result in additional transportation challenges and could result in greater impacts. (Greater Impact)

Utilities and Service Systems

Alternative 2 would result in similar impacts on utilities and service systems compared to the proposed project. Although existing CUP operations would remain, new connections would be needed at the satellite plant. Water and energy use would increase, and there would be a slightly greater impact on the stormwater drainage system because the project footprint and new impervious surface area would be larger than under the proposed project. (Greater Impact)

4.6 Comparison of Alternatives

Table 4-1 summarizes the environmental evaluations provided above for the project alternatives.

Table 4-1. Comparison of the Environmental Impacts of the Alternatives in Relation to CUP Expansion Project

Environmental Topic	CUP Expansion Project	No-Project Alternative	Alternative 2
Aesthetics	LTS/M	<	=
Air Quality	LTS/M	>	>
Archaeological, Historical, and Tribal Cultural Resources	LTS/M	<	>
Biological Resources	LTS/M	<	>
Energy	LTS	>	>
Geology, Soils, and Seismicity	LTS/M	<	>
Greenhouse Gas Emissions	LTS	>	>
Hazards and Hazardous Materials	LTS/M	<	=
Hydrology and Water Quality	LTS/M	<	>
Land Use and Planning	LTS	<	>
Noise	SU	<	<
Population and Housing	LTS	<	>
Public Services	LTS	=	=
Recreation	LTS	<	=
Transportation and Circulation	LTS/M	<	>
Utilities and Service Systems	LTS	<	>

Source: Data compiled by ICF in 2023.
Impact Status:
LTS = Less than Significant Impact.
LTS/M = LTS with Mitigation.
SU = Significant and Unavoidable.
= Impacts would be similar to those of the project.
< Impacts would be less than those of the project.
> Impacts would be greater than those of the project.

4.7 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6 states that an EIR should identify the "environmentally superior" alternative. As described above in Section 4.3, there would be one significant impact associated with the project that cannot be reduced to a less-than-significant level through mitigation and would therefore be unavoidable. This significant and unavoidable impact is related to construction noise.

Alternative 1, the No-Project Alternative, would reduce impacts related to construction noise but result in greater impacts related to air quality, energy, and GHG emissions because the project benefits would not be achieved. Furthermore, the University would not achieve the goal of reducing natural gas combustion by 80 percent. Therefore, the No-Project Alternative would not achieve the identified project objectives and would result in conflicts with the UC Sustainable Practices Policy.

Alternative 2, Campus Core Non-HCAI Satellite Heat Recovery Plant (Continued Cogeneration with Existing Plant), would reduce construction noise impacts at the existing on-campus sensitive receptor to a less-than-significant level. Although this alternative could result in greater operational noise impacts, it is anticipated that the impacts could be reduced by noise-reduction mitigation. However, the alternative would not reduce the significant and unavoidable construction noise

impacts associated with the SMUD facilities. Although Alternative 2 would reduce the construction noise impact of the proposed project, it would increase impacts related to air quality, energy, and GHG emissions and would have slightly greater impacts on other resources because Alternative 2 would have a larger project footprint.

Because Alternative 2 would reduce a significant unavoidable impact of the proposed project while reducing GHG impacts compared to the No-Project Alternative, Alternative 2 is the environmentally superior alternative.

Chapter 5
References Cited

5.0 Executive Summary

None.

5.1 Chapter 1, Introduction

University of California. 2021. Final Environmental Impact Report (EIR). SCH No.: 2021020515. Board of Regents of the University of California.

University of California. 2022. Sacramento Ambulatory Surgery Center (SASC) Project. SCH No.: 2020020161. Board of Regents of the University of California.

5.1.1 Personal Communications

Olaguez, Erica. Supervisor, Environmental Programs, University of California, Davis Health. April 28, 2021—letter to Jeffery Quok, air quality engineer, Sacramento Metropolitan Air Quality Management District (request to correct/cancel permit to operate).

5.2 Chapter 2, Project Description

AEI. 2022. *Utility Master Plan Update Draft Report*. University of California, Davis Health. April.

UC Davis. 2020. *Sacramento Campus 2020 Long-Range Development Plan Update*. Volume 2: Aggie Square Phase I Final Supplemental Environmental Impact Report. Available: https://environmentalplanning.ucdavis.edu/uc-davis-sacramento-campus-2020-lrdp-update.

UC Davis. 2021. *UC Davis California Hospital Tower Project Final Environmental Impact Report.* November. Available: https://environmentalplanning.ucdavis.edu/california-tower.

UC Davis. 2022. *UC Davis Sacramento Ambulatory Surgery Center Addendum to the UC Davis Sacramento Campus 2020 Long-Range Development Plan Update SEIR.* May. Available: https://environmentalplanning.ucdavis.edu/current-projects#SASC.

University of California. 2023. *Policy on Sustainable Practices*. July. Available: https://policy.ucop.edu/doc/3100155/SustainablePractices.

5.2.1 Personal Communications

Olaguez, Erica. Supervisor, Environmental Programs, University of California, Davis Health. April 28, 2021—letter to Jeffery Quok, air quality engineer, Sacramento Metropolitan Air Quality Management District (request to correct/cancel permit to operate).

5.3 Chapter 3, Existing Environmental Setting, Impacts, and Mitigation

City of Sacramento. 2015. Sacramento 2035 General Plan. Adopted March 3, 2015. Available https://www.cityofsacramento.org/Community-Development/Resources/Online-Library/2035--General-Plan. Accessed July 27, 2023.

5.3.1 Section 3.1, Aesthetics

California Department of Transportation (Caltrans). 2019. *Scenic Highway System Lists: List of Eligible and officially designated State Scenic Highways.* August. Available: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed: April 6, 2020.

City of Sacramento. 2023. *Sacramento 2040 General Plan*. Public Review Draft. April 28, 2023. Available: https://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/Major-Projects/generalPlan/PRD_2040_SacGPU_20230428_Compressed.pdf?la=en. Accessed: July 31, 2023.

University of California, Davis Health System. 2014. *UCDMC Campus Standards & Master Specifications Design Requirements*. Available: https://health.ucdavis.edu/facilities/pdf-docs/CSMS-WEB(PDF)/Part-II(Design-Requirements)/Design-Requirements(12-01-14).pdf. Accessed: June 5, 2020.

University of California. 2020a. Sacramento Campus 2020 Long-Range Development Plan Update. Volume 2: Aggie Square Phase I Final Supplemental Environmental Impact Report. Available: https://environmentalplanning.ucdavis.edu/uc-davis-sacramento-campus-2020-lrdp-update.

University of California, Davis (UC Davis). 2020b. *UC Davis Sacramento Campus 2020 Physical Design Framework.* UC Davis Health..

University of California, Davis Health (UC Davis Health). 2021. *Folsom Center for Health Draft Master Plan*. October.

5.3.2 Section 3.2, Air Quality

California Air Pollution Control Officers Association. 2022. *Handbook for Analyzing GHG Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*. December.

California Air Resources Board. 2023. *iADAM: Air Quality Data Statistics (Top 4 Summary).* Available: https://www.arb.ca.gov/adam/topfour/topfour1.php. Accessed: July 6, 2023.

California Office of Environmental Health Hazard Assessment. 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments*. February. California Environmental Protection Agency.

Centers for Diesel Control and Prevention. 2019. *What Are Social Determinants of Health?* Available: https://www.cdc.gov/nchhstp/socialdeterminants/faq.html#what-are-social-determinants. Accessed: July 11, 2023.

CleaverBrooks. 2023. *Estimated Exhaust/Emission Performance Data*. Boiler SFC-PM-700-12000. May.

Public Health Alliance of Southern California. 2023. *The California Healthy Places Index (HPI): Sacramento.* Available: https://map.healthyplacesindex.org/. Accessed: July 11, 2023.

Ramboll US Corporation (Ramboll). 2020. *Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District*. Final. October.

Sacramento Metropolitan Air Quality Management District. 2013. *Dispersion Modeling of Construction-Generated PM10 Emissions*. Available: http://airquality.org/LandUseTransportation/Documents/Ch3PMDispersionModelingGuidanceFINAL7-2013.pdf. Accessed: May 7, 2021.

Sacramento Metropolitan Air Quality Management District. 2016. *Guide to Air Quality Assessment in Sacramento County.* Chapter 7, Odors. June.

Sacramento Metropolitan Air Quality Management District. 2018. *Board-Adopted Methodology (Technical Appendix) for the Mobile Sources Air Toxics Protocol, V1.1*. Available: http://www.airquality.org/LandUseTransportation/Documents/V1.1MSATProtocolMethodologyAppendixJuly2018.pdf. Accessed: March 26, 2021.

Sacramento Metropolitan Air Quality Management District. 2020a. *Guide to Air Quality Assessment in Sacramento County.* Chapter 2, Environmental Review and Thresholds of Significance. April.

Sacramento Metropolitan Air Quality Management District. 2020b. *Guide to Air Quality Assessment in Sacramento County.* Chapter 4, Operational Criteria Air Pollutant and Precursor Emissions. October.

Sacramento Metropolitan Air Quality Management District. 2020c. *Guide to Air Quality Assessment in Sacramento County.* Chapter 3, Construction-Generated Criteria Air Pollutant and Precursor Emissions. April.

Sacramento Metropolitan Air Quality Management District. 2020d. *Guide to Air Quality Assessment in Sacramento County.* Chapter 8, Cumulative Air Quality Impacts. May.

Sacramento Municipal Utility District. 2022. *Cordova Park Underground Cable Replacement Project*. Draft Environmental Impact Report. State Clearinghouse #2022030186. May.

U.S. Environmental Protection Agency. 2011. Haul Road Workgroup Final Report. Available: https://www3.epa.gov/scram001/reports/Haul_Road_Workgroup-Final_Report_Package-20120302.pdf. Accessed: March 26, 2021.

U.S. Environmental Protection Agency. 2015. *Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas.* Appendix J.

U.S. Environmental Protection Agency. 2023. *Monitor Values Report*. Available: https://www.epa.gov/outdoor-air-quality-data/monitor-values-report. Accessed: July 6, 2023.

Personal Communications

Muller, Virginia. Legal Assistant II/Clerk of the Hearing Board. Sacramento Metropolitan Air Quality Management District. March 20, 2020—email messages to ICF regarding Sacramento Metropolitan Air Quality Management District Public Records Act (PRA) Requests 1158 and 1164.

Ramirez, Wesley. Project Manager. UC Davis Health. Sacramento, CA. July 2023—email message to ICF regarding CUP Expansion air quality data.

5.3.3 Section 3.3, Biological Resources

Airola, D. A., and D. Kopp. 2018. Another Substantial Decline in the Sacramento Purple Martin Nesting Population in 2018: The Role of Construction Disturbance and Future Threats. *Central Valley Bird Club Bulletin* 21:75–87.

City of Sacramento. 2017. 2035 General Plan Land Use & Urban Form Diagram. Last Amended February 22, 2017. Available: https://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/General-Plan/2035-GP/2035-SacGPU_LUD.pdf?la=en. Accessed July 27, 2023.

University of California, Davis (UC Davis). 2020. Sacramento Campus 2020 Long Range Development Plan Update. Available: https://environmentalplanning.ucdavis.edu/sites/g/files/dgvnsk2921/files/inline-files/UCD_Sacramento_2020__LRDP_0.pdf. Accessed: August 21, 2023.

5.3.4 Section 3.4, Archaeological, Historical, and Tribal Cultural Resources

Pacific Legacy, Inc. 2021. Proposal for Subsurface Exploration for Historic Graves Exploration at UC Davis Medical Center, Sacramento, California. Prepared for University of California, Davis. July 1, 2021.

City of Sacramento. 2015. Historic and Cultural Preservation. In *Sacramento 2035 General Plan.* Adopted March 3, 2015. Available: https://www.cityofsacramento.org/Community-Development/Resources/Online-Library/2035--General-Plan. Accessed: June 18, 2020.

City of Sacramento. 2023. *Sacramento 2040 General Plan*. Public Review Draft. April 28, 2023. Available: https://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/Major-Projects/generalPlan/PRD_2040_SacGPU_20230428_Compressed.pdf?la=en. Accessed: July 31, 2023.

North Central Information Center. 2023. Records Search for the SMUD Feeder Routes 1 and 2. August 7, 2023. California State University, Sacramento, California.

5.3.5 Section 3.5, Energy

Climate Registry. 2019. *Default Emission Factors*. Tables 2.1 and 2.7. May.

Climate Registry. 2022. *The Climate Registry*. Available: https://theclimateregistry.org/wp-content/uploads/2022/11/2022-Default-Emission-Factors-Final.pdf. Accessed: July 26, 2023.

University of California, Davis Health System. 2014. *UCDMC Campus Standards & Master Specifications Design Requirements*. 07/2014 Edition; Rev. 2 (12-01-2014).

5.3.6 Section 3.6, Geology, Soils, and Seismicity

California Geological Survey. 2018. *Earthquake Fault Zones: A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California.* Special Publication 42. Available: https://www.conservation.ca.gov/cgs/documents/publications/special-publications/SP_042-a11y.pdf.

5.3.7 Section 3.7, Greenhouse Gas Emissions

California Air Resources Board. 2017. *The 2017 Climate Change Scoping Plan Update: The Strategy for Achieving California's 2030 GHG Target.* January.

California Air Resources Board. 2023. Current California GHG Emission Inventory Data. Available: https://ww2.arb.ca.gov/ghg-inventory-data. Accessed: July 7, 2023.

California Natural Resources Agency. 2018. *Final Statement of Reasons for Regulatory Action—Amendments to the State CEQA Guidelines*. Pages 41 and 42. OAL Notice File No. Z-2018-0116-12. November 2018.

City of Sacramento. 2023. *Sacramento 2040 General Plan*. Public Review Draft. April 28, 2023. Available: https://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/Major-Projects/generalPlan/PRD_2040_SacGPU_20230428_Compressed.pdf?la=en. Accessed: July 31, 2023.

Climate Registry. 2022. Default Emission Factors. Tables 2.1 and 2.7. May.

Intergovernmental Panel on Climate Change. 2014. *Climate Change 2014: Synthesis Report*. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R. K. Pachauri and L. A. Meyer (eds.)]. Geneva, Switzerland.

Ramboll US Corporation (Ramboll). 2020*. Greenhouse Gas Thresholds for Sacramento County.* Prepared for Sacramento Metropolitan Air Quality Management District. March. Available: https://www.airquality.org/LandUseTransportation/Documents/SMAQMDGHGThresholds2020-03-04v2.pdf.

Ramirez, Wesley. Project Manager. UC Davis Health. Sacramento, CA. July 2023—email message to ICF regarding CUP Expansion air quality data.

Sacramento Municipal Utility District (SMUD). 2022. *Cordova Park Underground Cable Replacement Project Draft Environmental Impact Report*. State Clearinghouse #2022030186. May.

U.S. Environmental Protection Agency. 2023. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021. EPA 430-R-23-002.

University of California, Davis (UC Davis). 2021. *California Hospital Tower Project Environmental Impact Report*. State Clearinghouse No. 2021020515.

5.3.8 Section 3.8, Hazards and Hazardous Materials

California Department of Forestry and Fire Protection (CAL FIRE). 2008. Very High Fire Hazard Severity Zones, Sacramento County. Prepared by Fire and Resource Assessment Program. Sacramento, CA. July.

City of Sacramento. 2015. Public Health and Safety. In Sacramento 2035 General Plan. Adopted March 3, 2015. Available: https://www.cityofsacramento.org/Community-Development/Resources/Online-Library/2035--General-Plan. Accessed: July 6, 2020.

Department of Toxic Substances Control. 2023. EnviroStor. Available: https://www.envirostor.dtsc.ca.gov/public/. Accessed: August 3, 2023.

University of California, Davis Health. 2021. UC Davis Health Education & Research Emergency Action & Evacuation Plan. Davis, CA.

University of California, Davis Sacramento Campus. 2019. Risk Management Plan: Patient Safety and Risk Management Program. July.

Universal Engineering Sciences. 2023. Phase I Environmental Site Assessment (ESA) UCDMC CUP Expansion Property, 2nd Avenue and 48th Street, Sacramento, Sacramento County, California. Prepared for UC Davis Health. West Sacramento. April.

5.3.9 Section 3.9, Hydrology and Water Quality

Affiliated Engineers. 2022. University of California, Davis Health Utility Master Plan Update Draft Report. April 29.

Brown, Carmel K, Shannon Brown, Robert Smith, Mack Walker, Mark Kubik, Carlos Espana, N. Alison Tucker. 2018. Sacramento Region Stormwater Quality Design Manual. July.

City of Sacramento. 2009. *2030 General Plan Environmental Impact Report*. March.

City of Sacramento. 2015. Environmental Resources and Environmental Constraints. In Sacramento 2035 General Plan. Adopted March 3, 2015. Available: https://www.cityofsacramento.org/Community-Development/Resources/Online-Library/2035--General-Plan. Accessed: July 6, 2020.

Central Valley Regional Water Quality Control Board. 2019. *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fifth Edition (Basin Plan).* February.

County of Sacramento. 2021. South American Subbasin Groundwater Sustainability Plan. Final Report. October 29, 2021. Available: SASbGSP_FrontEnd-ExecSumm_FINAL_10292021.pdf (sasbgroundwater.org). Accessed September 6, 2023.

Federal Emergency Management Agency (FEMA). 2012a. *FEMA's National Flood Hazard Layer Viewer*. FEMA Flood Insurance Rate Map Panel 190 of 705, Map Number 06067C0190H. August 16. Available: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Accessed: July 18, 2023.

Federal Emergency Management Agency (FEMA). 2012b. *FEMA's National Flood Hazard Layer Viewer*. FEMA Flood Insurance Rate Map Panel 195 of 705, Map Number 06067C0195H. August

16. Available: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Accessed: July 18, 2023.

University of California. 2023. Policy on Sustainability Practices. Available: https://policy.ucop.edu/doc/3100155/SustainablePractices. Accessed: August 21, 2023.

5.3.10 Section 3.10, Land Use and Planning

City of Sacramento. 2015. Sacramento 2035 General Plan. Adopted March 3, 2015. Available https://www.cityofsacramento.org/Community-Development/Resources/Online-Library/2035--General-Plan. Accessed July 27, 2023.

City of Sacramento. 2022. Stockton Blvd Plan. Community Working Version. July 2022. Available: https://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/Stockton-Blvd-Plan/00SBPComWkingVersionFINAL071522.pdf?la=en. Accessed: July 28, 2023.

City of Sacramento. 2023. Sacramento 2040 General Plan Public Review Draft. April 28, 2023. Available: https://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/Major-Projects/generalPlan/PRD_2040_SacGPU_20230428_Compressed.pdf?la=en. Accessed July 28, 2023.

5.3.11 Section 3.11, Noise

California Department of Transportation (Caltrans). 2013. Table 19. In *Transportation and Construction Vibration Guidance Manual*. April 2020.

Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment, FTA Report No. 0123.* Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed: July 23, 2023.

City of Sacramento. 2015. Sacramento 2035 General Plan. Adopted March 3, 2015. Available https://www.cityofsacramento.org/Community-Development/Resources/Online-Library/2035--General-Plan. Accessed July 27, 2023.

City of Sacramento. 2023. Sacramento 2040 General Plan Public Review Draft. April 28, 2023. Available: https://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/Major-Projects/generalPlan/PRD_2040_SacGPU_20230428_Compressed.pdf?la=en. Accessed September 12, 2023.

University of California. 2010. *UC Davis Sacramento Campus 2010 Long Range Development Plan Draft Environmental Impact Report*. Prepared for University of California, Davis. Prepared by: Impact Sciences, Inc. and Fehr & Peers.

University of California, Davis 2023. Parking Structure 7 Addendum. State Clearinghouse No. 2020020161. August.

University of California, Davis. 2022. Modular Fitness Center Addendum. State Clearinghouse No. 2020020161. November.

Federal Highway Administration (FHWA). 2006. Roadway Construction Noise Model User's Guide, 2006. Available:

https://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf. Accessed: January 20, 2023.

Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment, FTA Report No. 0123.* Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed: June 23, 2020.

Cummins, Inc. 2017. *Cummins Power Generation, Sound Data, 1,250 DQGAE.* August. Available: https://powersuite.cummins.com/en. Accessed: October 2, 2021.

5.3.12 Section 3.12, Population and Housing

Sacramento Area Council of Governments. 2019. *2020 Metropolitan Transportation Plan/Sustainable Communities Strategy*. Available: https://www.sacog.org/sites/main/files/file-attachments/2020_mtp-scs.pdf?1580330993. Accessed: December 28, 2021.

5.3.13 Section 3.13, Public Services

Sacramento Fire Department. 2023. City of Sacramento Fire Department – About. Available: https://www.cityofsacramento.org/Fire/About Accessed: July 19, 2023.

City of Sacramento Police Department (SFD). 2017. *Sacramento Police Department 2016 Annual Report.* Available: https://www.cityofsacramento.org/Police/About-SPD/Annual-Report. Accessed: September 12, 2023.

5.3.14 Section 3.14, Recreation

none

5.3.15 Section 3.15, Transportation and Circulation

University of California. 2023. *Policy on Sustainable Practices*. July. Available: https://policy.ucop.edu/doc/3100155/SustainablePractices.

University of California. 2020a. Sacramento Campus 2020 Long-Range Development Plan Update. Volume 2: Aggie Square Phase I Final Supplemental Environmental Impact Report. Available: https://environmentalplanning.ucdavis.edu/uc-davis-sacramento-campus-2020-lrdp-update.

Governor's Office of Planning and Research (OPR). 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. Sacramento, California. December. Available: https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. Accessed: September 12, 2023.

Sacramento Area Council of Governments. 2019. *2020 Metropolitan Transportation Plan/Sustainable Communities Strategy*. Available: https://www.sacog.org/sites/main/files/file-attachments/2020_mtp-scs.pdf?1580330993. Accessed: December 28, 2021.

City of Sacramento. 2015. Sacramento 2035 General Plan. Adopted March 3, 2015. Available https://www.cityofsacramento.org/Community-Development/Resources/Online-Library/2035--General-Plan. Accessed July 27, 2023.

5.3.16 Section 3.16, Utilities and Service Systems

Affiliated Engineers, Inc. (AEI). 2019. "Sections 1.0, Executive Summary, 2.0, Utility Existing Conditions, and 11.0, Civil Site Utilities." In *University of California, Davis Sacramento Campus Utility Master Plan Update*. Draft Final Report. January 14, 2019.

Affiliated Engineers. 2022. University of California, Davis Health Utility Master Plan Update Draft Report. April 29.

City of Sacramento. 2015. Sacramento 2035 General Plan. Adopted March 3, 2015. Available https://www.cityofsacramento.org/Community-Development/Resources/Online-Library/2035--General-Plan. Accessed July 27, 2023.

City of Sacramento. 2023. Sacramento 2040 General Plan Public Review Draft. April 28, 2023. Available: https://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/Major-Projects/generalPlan/PRD_2040_SacGPU_20230428_Compressed.pdf?la=en. Accessed July 28, 2023.

Kirk, Camille, and David Phillips. 2014. *UC Davis Drought Response Action Plan.* April 2014. Available: https://sustainability.ucdavis.edu/local_resources/docs/drought_response_action_plan_april_2014.pdf. Accessed: July 1, 2023.

Regional Water Quality Control Board, 2023. California Regional Water Quality Control Board Central Valley Region – Requiring Sacramento Regional County Sanitation District Sacramento Regional Wastewater Treatment Plant. Available: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/sacramento/r5-2023-0900.pdf Accessed: July 31, 2023

Sacramento Suburban Water District 2021, Sacramento Suburban Water District Urban Water Management
Plan. Available: https://www.sswd.org/home/showpublisheddocument/9937/637583957132970000 Accessed, July 23, 2023,

5.4 Chapter 4, Alternatives

Affiliated Engineers Inc. 2022. *University of California, Davis Health Utility Master Plan Update.* Draft Report. Prepared for University of California, Davis Health. April 29.

University of California, Davis Health, Education & Research. 2019. *Emergency Action & Evacuation Plan*.

Chapter 6
Preparers

6.1 EIR Authors

6.1.1 University of California, Davis

- Heather Davis, AICP, Interim Director of Environmental Planning
- Alex Tremblay, Environmental Planner
- Emily Hyland, Environmental Planner
- Ha Ly, Associate Director, UC Office of the President

6.1.2 ICF

- Sally Zeff, AICP, Project Director
- Lindsay Christensen, Project Manager
- John Mathias, Editor
- Kristen Lundstrom, Editor
- Anthony Ha, Senior Publications Specialist
- Laura Yoon, Air Quality and Climate Change Specialist
- Darren Trageser, Air Quality Specialist
- Tina Sorvari, Senior Environmental Planner
- Bradley Stoneman, Senior Environmental Planner
- James Alcorn, Senior Environmental Planner
- Katrina Sukola, Environmental Scientist
- Elizabeth Scott Foley, Senior Noise Specialist
- Noah Schumaker, Noise Specialist

6.1.3 Fehr & Peers

- Robert Hananouchi, AICP, Associate

Appendices

- Appendix A Notice of Preparation
- Appendix B Air Quality Modeling Outputs
- Appendix C Cultural Resources Consultation
- Appendix D Noise Modeling Outputs

Appendices can be accessed online at the following URL:
https://environmentalplanning.ucdavis.edu/CUP-Expansion