



UCMERCED

INITIAL STUDY

**HEALTH AND BEHAVIORAL SCIENCES-MEDICAL EDUCATION (HBS-ME)
BUILDING PROJECT**

UNIVERSITY OF CALIFORNIA MERCED, MERCED COUNTY, CALIFORNIA

April 2021

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**HEALTH AND BEHAVIORAL SCIENCES-MEDICAL EDUCATION (HBS-ME)
BUILDING PROJECT**

UNIVERSITY OF CALIFORNIA MERCED, MERCED COUNTY, CALIFORNIA

Submitted to:

University of California, Merced
Physical and Environmental Planning
5200 North Lake Road
Merced, California 95343

Prepared by:

LSA
201 Creekside Ridge Court, Suite 250
Roseville, California 95678
916.772.7450

Barati Consulting, LLC
35688 Barnard Drive
Fremont, CA 94536
510.846.7573

April 2021

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INTRODUCTION

This Initial Study provides a preliminary evaluation of the potential environmental consequences of implementation of the proposed Health and Behavioral Sciences-Medical Education (HBS-ME) Building Project (Project). Pursuant to Section 15063 of the California Environmental Quality Act (CEQA) Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.), an Initial Study is a preliminary environmental analysis that is used by the lead agency (the public agency principally responsible for approving or carrying out the proposed project) as a basis for determining whether an Environmental Impact Report (EIR), a Mitigated Negative Declaration, or a Negative Declaration is required for a project. The CEQA Guidelines require that an Initial Study contain a project description; description of environmental setting; identification of environmental effects by checklist or other similar form; explanation of environmental effects; discussion of mitigation for significant environmental effects; evaluation of the project's consistency with existing, applicable land use controls; and the name of persons who prepared the study. The University of California (UC or University) is the "lead agency" for this Project consistent with CEQA, and the University of California, Merced (UC Merced or Campus) is the Project proponent. The Board of Regents of the University of California (The Regents) has the principal responsibility for approving this Project.

In March 2020, The Regents certified a program-level Subsequent EIR (SEIR)¹ that analyzed and disclosed the impacts from the implementation of an updated Long Range Development Plan (LRDP)² for the UC Merced campus, and adopted the UC Merced 2020 LRDP as a guide for physical development to accommodate enrollment growth projected through 2030. The 2020 LRDP SEIR addressed the development of the campus to accommodate the full buildout enrollment of 15,000 Full Time Equivalent (FTE) students within a 1,026-acre campus footprint.

In mid-2020, the Campus commenced the planning for the development of a new academic building to house the UC Merced's nascent Medical Education, Health Sciences and Health Policy program, as well as the Campus' largest and fastest growing Departments of Psychological Sciences and Public Health. The proposed HBS-ME Building Project consists of two components: 1) development of the proposed HBS-ME Building including a site access road and parking lot and 2) modifications to the storm water detention basins within Cottonwood Meadow. The purpose of this Initial Study is to evaluate the potential environmental impacts of the proposed Project to determine the appropriate level of environmental review. Based on the analysis in this Initial Study and as shown in **Section 4.0**, Determination, the University has determined that development of the proposed HBS-ME Building Project could result in potentially significant impacts related to air quality, hydrology/water quality, public services, transportation, tribal cultural resources, and utilities/service systems, and that an EIR must be prepared.

The 2020 LRDP SEIR analyzed potential impacts of traffic generated by campus growth through 2030 on roadway facilities based on an analysis of level of service (LOS) impacts. However, since the certification of the 2020 LRDP SEIR in March 2020, CEQA documents (as of July 1, 2020) must include

¹ University of California, Merced. 2019. *UC Merced 2020 Long-Range Development Plan Final Subsequent Environmental Impact Report*, March 2020.

² University of California, Merced. 2020. *UC Merced 2020 Long-Range Development Plan*, March 2020.

an evaluation of transportation impacts based on vehicle miles traveled (VMT), pursuant to Senate Bill (SB) 743. As specified by SB 743 and the associated updates to the CEQA Guidelines, automobile delay, as measured by “level of service” and other similar metrics, no longer constitutes a significant environmental effect under CEQA (Public Resources Code, Section 21099, subd. (b)(3)). Therefore, the EIR will also include an updated supplemental program-level transportation impact analysis of campus growth through 2030 under the 2020 LRDP based on a VMT metric consistent with CEQA Guidelines Section 15064.3, subdivision (b).

ANTICIPATED PROJECT APPROVALS

The University will prepare an EIR that fully evaluates the environmental effects associated with development of the proposed HBS-ME Building Project. Necessary Project actions and approvals are anticipated to include, but are not limited to, consideration of the following by The Regents (anticipated in late 2021):

- Certification of the HBS-ME Building Project EIR; and
- Approval of the development of the HBS-ME Building Project.

PUBLIC AND AGENCY REVIEW

The Notice of Preparation (NOP) and this Initial Study will be circulated for public and agency review from April 2, 2021 through May 3, 2021. The NOP/Initial Study is available online at <https://planning.ucmerced.edu/ceqa-environmental-documents>. Please note that due to COVID-19 and California’s State of Emergency (Executive Order N-54-20) the UC Merced and Merced County libraries and UC Merced offices are closed. Providing paper copies of the NOP/Initial Study at these locations is not feasible at this time. Please contact the UC Merced Department of Physical & Environmental Planning if you need assistance obtaining paper copies of these documents.

Comments on the NOP/Initial Study must be received by 5:00 p.m. on May 3, 2021 and can be sent to:

Phillip Woods, AICP
Campus Architect and Director of Physical & Environmental Planning
Physical & Environmental Planning
University of California, Merced
5200 North Lake Road
Merced, California 95343
CEQA@ucmerced.edu

ORGANIZATION OF THE INITIAL STUDY

The Initial Study is organized into the following sections:

Section 1.0 – Project Information: provides summary background information about the proposed Project, including project location, lead agency, and contact information.

Section 2.0 – Project Description: includes a description of the Project site and land use context; Project background and objectives; and details of the proposed Project itself.

Section 3.0 – Environmental Factors Potentially Affected: on the basis of the Initial Study, this section identifies the environmental topics that would involve at least one significant or potentially significant impact.

Section 4.0 – Determination: indicates whether impacts associated with the proposed Project would be significant, and what, if any, additional environmental documentation is required.

Section 5.0 – Evaluation of Environmental Impacts: contains the Environmental Checklist form (CEQA Guidelines, Appendix G) and presents a discussion of all environmental topics. The checklist is used to assist in evaluating the potential environmental impacts of the proposed Project and determining which impacts, if any, need to be mitigated or further evaluated in the EIR.

Section 6.0 – Initial Study Preparers: lists the names of individuals involved in the preparation of this document.

Section 7.0 – References: lists references used in the preparation of this document.

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1.0 PROJECT INFORMATION

1. Project Title:

Health and Behavioral Sciences-Medical Education (HBS-ME) Building Project

2. Lead Agency Name and Address:

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

3. Contact Person and Phone Number:

Phillip Woods, AICP
UC Merced Campus Architect and Director of Physical & Environmental Planning
(209) 349-2561

4. Project Location:

The Project site is located within the existing UC Merced campus at 5200 Lake Road, Merced, CA 95343. The proposed HBS-ME Building Project would be developed on the southeastern side of the campus, between Cottonwood Loop Road and the existing Arts and Computational Sciences Building. Modifications to existing campus storm water detention basins would occur within Cottonwood Meadow to the south of the proposed building location.

5. Project Sponsor's Name and Address:

Physical & Environmental Planning
University of California, Merced
5200 North Lake Road
Merced, CA 95343

6. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resource Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

No California Native American tribes traditionally or culturally affiliated with the Project area have requested consultation pursuant to Public Resource Code (PRC) Section 21080.3.1. However, UC Merced proactively sent out letters on April 2, 2021 to Native American tribes with traditional lands or cultural places located within the region of the campus to determine if they wish to consult regarding this proposed Project. Tribal consultation will be discussed in the EIR.

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2.0 PROJECT DESCRIPTION

UC Merced proposes to develop a new academic building, including a site access road and parking lot, in the southeastern portion of the existing campus adjacent to Cottonwood Meadow. The building would house the Campus' Health and Behavioral Sciences-Medical Education (HBS-ME) programs. In addition, UC Merced plans to modify the existing Cottonwood Meadow storm water detention basins to accommodate the siting of the proposed building and to provide detention capacity for storm water runoff generated by the proposed building, parking lot, and other improvements. Both of these actions are herein referred to as either the "proposed Project" or "Project."

Because the proposed Project would be undertaken by the University, as the lead agency, the University must evaluate the potential environmental impacts of the proposed Project in compliance with CEQA. The University has completed an evaluation of the proposed Project pursuant to Section 15168(c)(2) of the CEQA Guidelines to determine if the proposed Project is within the scope of UC Merced's 2020 LRDP Program SEIR³ that was certified by the University in March 2020 and the 2009 UC Merced and University Community Project joint Environmental Impact Statement (EIS) and Environmental Impact Report (EIR)⁴ (2009 LRDP EIS/EIR) that was certified in 2009. The CEQA Guidelines state that if the lead agency can find that, pursuant to Section 15162, no new impacts could occur and no new mitigation measures are required, then the Project is within the scope of the previous program EIR, and no further evaluation is required. The University has determined – on the basis of the analysis in this Initial Study – that while the proposed Project is within the scope of the development that was analyzed in the 2020 LRDP SEIR and the 2009 LRDP EIS/EIR, the proposed Project has the potential to result in specific project-level impacts that may not be fully disclosed in the 2020 LRDP SEIR and the 2009 LRDP EIS/EIR. Therefore, the University will proceed with the preparation of a project-level EIR for the proposed Project that will be tiered from the 2020 LRDP SEIR and the 2009 LRDP EIS/EIR under the tiering provisions of CEQA.

The 2020 LRDP sets forth the development plans for the UC Merced campus to the year 2030. The 2020 LRDP SEIR addressed the development of the campus to the full buildout enrollment of 15,000 students by 2030 on a 1,026-acre campus footprint. As described in Section 2.3.1 of the 2020 LRDP SEIR, based on an enrollment level of 9,700 students in 2020, the campus population is projected to increase by about 5,300 students by 2030, and employment at the campus is projected to increase by 1,131 faculty and staff during the same period. As described in Section 2.3.2 of the 2020 LRDP SEIR, about 1.83 million gross square feet (gsf) of building space is projected to be added to the campus between 2020 and 2030 to accommodate the projected enrollment increase and expanding academic programs. The proposed Project would include development of an approximately 182,698 gsf building to provide facilities for the Campus' HBS-ME program and a population addition of

³ University of California, Merced. 2020. *UC Merced 2020 Long-Range Development Plan Final Subsequent Environmental Impact Report*, March 2020.

⁴ University of California, Merced. 2009. *UC Merced and University Community Project Environmental Impact Statement/Environmental Impact Report*. March 2009.

about 2,999⁵ people (2,811 students and 188 staff/faculty). The building space and population growth associated with the proposed Project are within the program-level growth assumptions used in the 2020 LRDP SEIR analyses.

The 2020 LRDP identified areas of the campus that would be developed with new facilities under the 2020 LRDP and assigned land use designations to those lands to guide the development of facilities. The proposed building would be located on land within the campus that is designated as Campus Mixed Use (CMU) pursuant to the 2020 LRDP. The CMU designation permits for the development of academic, research, student housing, student and support services, athletic and recreational facilities, university affiliate dining and retail, administrative offices, service facilities, and parking. The proposed building would be a permitted use under the campus' CMU designation, as it would provide facilities for academic and research uses (as described in **Section 2.4**).

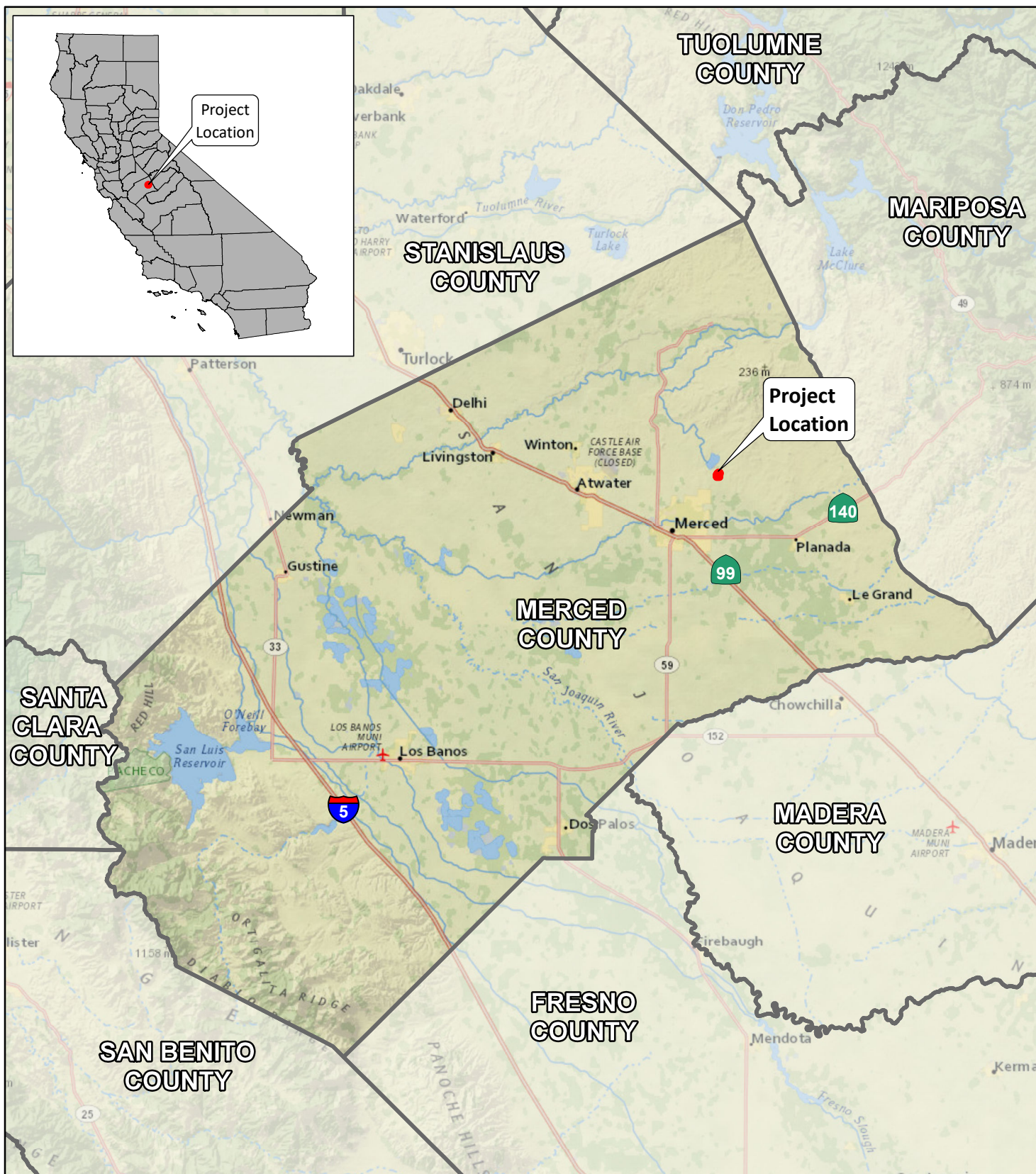
2.1 PROJECT LOCATION AND CONTEXT

The UC Merced campus is located in the San Joaquin Valley (SJV) of California in eastern Merced County, within the sphere of influence (SOI) of the City of Merced, as shown in **Figure 1: Regional Location**. The campus is approximately 2 miles northeast of the Merced City limits and is regionally access via State Route 99 (SR-99). The Project site is located on the southeast portion of the UC Merced campus, north of Cottonwood Meadow, and east-southeast of the Academic Quad.

Figure 2: Project Area shows the location of the approximately 37-acre Project area within the campus, including the area where the proposed building would be developed, construction staging areas, and storm water management areas. Surrounding facilities include the campus greenhouse and Biomedical Sciences and Physics building to the north, the Arts and Computational Sciences building and Glacier Point residences to the west, Cottonwood Loop Road and the Fairfield Canal to the east, and the Cottonwood Meadow storm water detention facilities to the south.

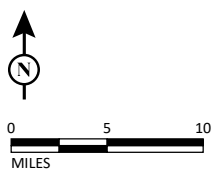
The Project area is currently not developed with any campus buildings. As shown in **Figure 2**, the HBS-ME Building Area overlaps slightly with a paved and landscaped outdoor gathering area associated with the Arts and Computational Sciences building, as well as storm water detention basins within Cottonwood Meadow that were constructed as part of the 2020 Project. There are recently planted landscape trees and shrubs located throughout Cottonwood Meadow. Other portions of the Project area to the south of Cottonwood Meadow consist of graded (unpaved) areas currently being used for campus construction staging and parking.

⁵ About 1,681 of the 2,999 persons that would occupy this building are already enrolled as students or employed in the Psychological Sciences and Public Health Departments as of 2020, and therefore the net new population due to this project would be on the order of about 1,318 persons. However, because the existing building space that would be vacated by the Psychological Sciences and Public Health Departments when those departments move to the proposed HBS-ME Building would be backfilled by the growth in other teaching and research programs, the analysis in this Initial Study conservatively assumes that the proposed Project would result in a campus population increase of about 2,999 persons.



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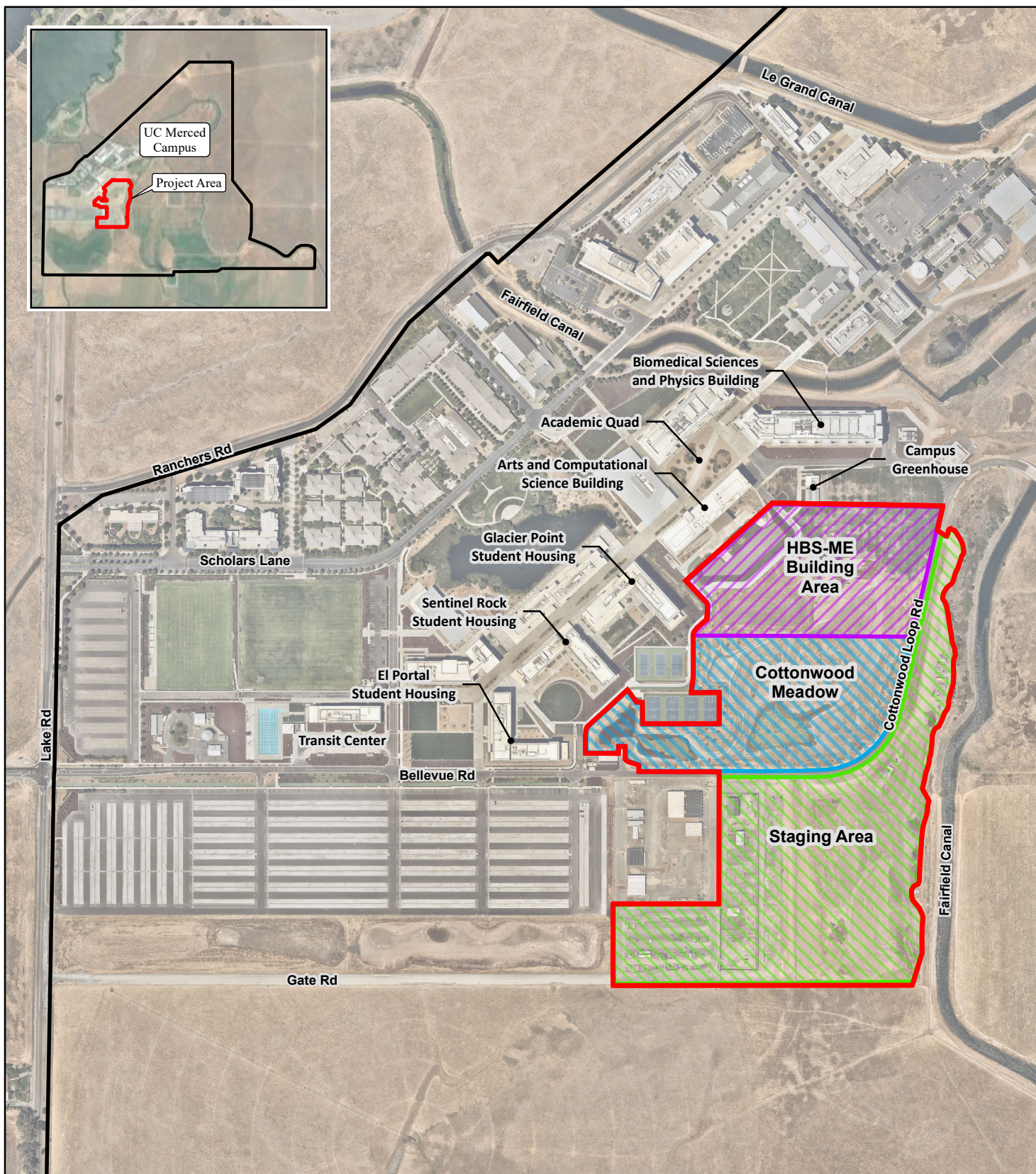
FIGURE 1



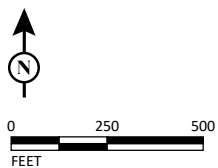
SOURCE: National Geographic World Map (2021).

I:\BTI2002.01\GIS\Maps\Project Description\Figure 1_Regional Location.mxd (3/24/2021)

Health & Behavioral Sciences – Medical Education
(HBS-ME) Building Project, UC Merced
Merced County, California
Regional Location



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LEGEND

- Project Area (36.9 acres)*
- HBS-ME Building Area (8.5 acres)
- Staging Area (18.0 acres)
- Stormwater Management Area (9.5 acres)
- UC Merced Campus Boundary

SOURCE: Aerial from Nearmap (07/2020).

* Project Area also includes 0.9 acre internal access roads

I:\BTI2002.01\GIS\Maps\Project Description\Figure 2_Project Area.mxd (3/24/2021)

FIGURE 2

*Health & Behavioral Sciences – Medical Education
(HBS-ME) Building Project, UC Merced
Merced County, California
Project Area*

2.2 PROJECT BACKGROUND

The COVID-19 epidemic has highlighted the critical need to address the scarcity of medical education opportunities and trained medical health professionals in the State of California, especially in the SJV. In its February 2019 Final Report,⁶ the California Future Health Workforce Commission estimated a shortfall of over 4,000 primary care providers in the State by 2030. Recognizing this serious need for medical education and trained medical health professionals in the SJV, the Campus has been actively engaged in the development of a medical education program since 2016. UC Merced is partnering with UC San Francisco (UCSF)-Fresno on the UCSF San Joaquin Valley Program in Medical Education (SJV PRIME) to recruit and train a new generation of healthcare professionals who will provide high-quality, culturally sensitive, and accessible health care in the SJV. The proposed building would house the UC Merced's nascent Medical Education, Health Sciences and Health Policy program.

The remainder of the proposed building program has evolved directly from the results of a 2018 Comprehensive Campus Space Planning Study⁷ and a 2018 Classroom Capacity Study⁸. Both studies identified several areas of vulnerability for the campus in the next decade (2018-2028). While the UC Merced 2020 Project facilities addressed many historical space issues, the comprehensive space plan identified several unmet campus space needs, including the space required to support medical education. Additionally, the studies revealed that insufficient and inadequate behavioral science research space is currently affecting future student enrollments and faculty hiring in the Departments of Psychological Sciences, Public Health, and Cognitive Science. Inability to hire faculty in these departments will increase the already above average student-to-faculty ratios in Psychological Sciences (55:1), Public Health (32:1), and Cognitive Science (33:1).

High student-to-faculty ratios in the classroom impede the ability of the existing faculty to develop the new Medical Education, Health Sciences and Health Policy education programs on campus and throughout the SJV. Hence, the Campus desires to build the necessary space to attract and house new, bright, and creative faculty to these programs to support existing students and new enrollments and to help develop the Medical Education and Health Policy programs. The space program for the proposed building would also enable the Developmental Psychology faculty to develop the Institute for Child and Family Sciences, plan for a future School of Public Health, and facilitate the delivery of the psychology and public health curricula and new curricula in anatomy and medicine. Further, enrollment growth will continue to put pressure on UC Merced's general classroom inventory as the 2018 Classroom Capacity Study indicates. The UC Merced 2020 Project, completed in summer 2020, is intended to support classroom instruction for up to 10,000 students. Recent classroom utilization studies conducted by UC Merced predict that 90 to 100 percent

⁶ California Future Health Workforce Commission. 2019. Meeting the Demand of Health: Final Report of the California Future Health Workforce Commission, February. Website: <https://futurehealthworkforce.org/>. Website accessed on February 18, 2021.

⁷ University of California, Merced. 2018a. 2020 Project and Backfill Space Allocation Plan. December.

⁸ University of California, Merced. 2018b. UC Merced Spring 2018 Capacity Analysis (Ad Astra Information Systems).

utilization will occur in all sizes of classrooms by the time that enrollment reaches 12,500 students (approximately 2025).

The space program for the proposed building would provide both specific types of learning spaces for medical education as well as distance learning and general assignment classrooms and class laboratories for the campus. The classrooms would support the delivery of a broad range of academic programs and partnerships in the health sciences arena, in addition to overall growth in campus enrollment.

Construction of the proposed building would allow for relocation of the Departments of Psychological Sciences and Public Health from the Social Sciences and Management (SSM) building to the new building. The resulting vacancy in the SSM building would enable the emerging School of Management to integrate the Departments of Economics and Cognitive Science under one roof while also providing sufficient space for future growth of the School of Management. Finally, relocation of the Department of Economics from the School of Social Sciences, Humanities and Arts (SSHA) into the SSM building would alleviate the overcrowding experienced by other departments in the SSHA building that was not resolved through the 2020 Project.

The proposed HBS-ME Building would become home to the Departments of Psychological Sciences and Public Health, UC Merced's nascent Medical Education program, and the Health Sciences Research Institute (HSRI). UC Merced's Psychological Sciences and Public Health Departments are structured by a regional, rural focus providing training in the deep and specific issues of marginalized, rural, and underserved populations and would help to provide essential research and training opportunities for undergraduate medical education. Multidisciplinary research is necessary to address the complex health problems facing the SJV. HSRI's overarching mission is to facilitate these research collaborations among UC Merced's health sciences faculty. The Campus believes that by bringing these particular departments and programs together in the proposed building that the outcomes will be greater than the sum of their parts.

In summary, the proposed Project is intended to address the following conditions:

- **Medical Education and Allied Healthcare Programs.** UC Merced currently does not have the appropriate facilities to support the UCSF-Fresno and SJV Prime partnership nor other partnerships with community colleges or other SJV healthcare worker training programs. For example, the campus currently does not have anatomy training facilities, adequate distance learning classrooms, or clinical or simulation skills training areas.
- **Obstacles to Faculty Hiring/Program Growth.** Additional office, research lab, graduate student and post doc space is needed to facilitate future growth in the Departments of Psychological Sciences, Public Health, Cognitive Sciences, and the emerging School of Management. Without additional space, these four existing programs will not be able to continue to support enrollment growth at the undergraduate and graduate level nor hire the additional faculty required to develop the anticipated new programs necessary to deliver a flourishing medical education pipeline program and affect the clinical research and healthcare in the region.

- **Obstacles to Creation of New Community-Based Programs.** The campus has no capacity to create and house new programs (i.e., Institute for Child and Family Sciences) without the creation of more and new types of space. Partnerships with community colleges, secondary schools, the Accreditation Council for Graduate Medical Education (ACGME) programs in the SJV and the other Health Center Program Look-Alikes in the SJV require facilities that promote community access and interaction.
- **General Assignment Classrooms.** Recent classroom utilization studies have shown that capacity in all classrooms will be reached by the time student enrollment reaches 12,500 students (approximately 2025) and capacity has already been reached in certain types of classrooms. The campus is at over 100 percent utilization of its computer classrooms, over 90 percent utilization in auditorium spaces, and between 70 and 80 percent utilization in large- or mid-sized lecture hall spaces. The recent experience of COVID-19 also emphasizes the need for the Campus to make distance learning capable classrooms a priority in any future buildings.

2.3 PROJECT OBJECTIVES

Based on the above conditions, the key objectives of the proposed Project are to:

- Provide space for the development of a new Medical Education program, initially in partnership with the UCSF-Fresno and SJV/PRIME program.
- Provide space for growth in the Department of Public Health and nascent plans for the creation of a School of Public Health.
- Provide space for growth in the Department of Psychological Sciences and creation of an Institute for Child and Family Sciences.
- Consolidate and collocate these existing and new programs in one facility so as to optimally draw upon the intellectual, technological, and material resources of the UC Merced programs and facilities, and enhance intellectual exchange and collaboration between related programs.
- Provide classroom space to support enrollment growth beyond 12,500 students.
- Maximize energy efficiency, sustainability, and cost-effectiveness of these programs by housing them in a consolidated, state-of-the-art building designed to balance energy use and cost efficiencies.

2.4 PROPOSED PROJECT

The proposed Project consists of two components: 1) development of the proposed HBS-ME Building including a site access road and a parking lot and 2) modifications to the storm water detention basins within Cottonwood Meadow. As reflected in **Figure 2**, the Project site is approximately 37 acres in size and consists of the following individual areas: approximately 8.5 acres for the proposed building area; approximately 18.0 acres for construction staging; and

approximately 9.5 acres of potential storm water management system modifications within Cottonwood Meadow. As the proposed building site overlaps with Cottonwood Meadow, modifications for storm water management may also occur within portions of the proposed building area, as shown in **Figure 2**. The remainder of the Project site (approximately 0.9 acre) is comprised of internal access roads. Individual Project components are further described below.

2.4.1 Proposed Building Program

The proposed building would include approximately 182,698 gsf of building space. After the space associated with common areas, such as lobbies, hallways and restrooms, is deducted, there would be approximately 118,751 assignable square feet (asf)⁹ of instructional, academic office, research, and community facing space in the proposed building. **Table 1: Proposed HBS-ME Building Uses** summarizes the uses that would be within the proposed building and the area of each type of space.

Table 1: Proposed HBS-ME Building Uses

Category	Square Feet
Academic Office and Support	17,222
Research and Research Support	48,789
Instructional and Instructional Support	33,350
Student Support/Study	6,680
Community Facing Space	12,710
Total Assignable Square Feet	118,751
Total Gross Square Feet	182,698

Source: UC Merced (March 2021).

As currently envisioned, the proposed building would include faculty offices, graduate student, post doc, and undergraduate research space for the Departments of Psychological Sciences and Public Health, and Medical Education programs. Further, it would support the growth of new medical education and allied healthcare worker training programs by providing the capacity for advanced new instructional facilities in digital anatomy, clinical and simulation skills training and distance learning. Existing biology and physiology students as well as students in various partnership programs in the healthcare community would also utilize these new specialized instructional facilities. The proposed building would also house the HSRI and associated research facilities, thus integrating the new building with a significant cross section of the campus research community.

The Institute for Child and Family Sciences and the Community Public Health Sample Collection and Analysis Labs would be conveniently accessible to the community on the ground floor and with accessible parking. Finally, creating an opportunity for community forums and dialog, a minimum 300 seat auditorium is planned in addition to large and medium sized lecture halls outfitted for distance learning, panel discussions, clinical and research symposiums, and introductory social and basic science courses.

⁹ "Assignable square feet (asf)" comprises the portion of building area assigned to or available for an occupant or specific use. Common areas such as restrooms, hallways, or mechanical space are excluded.

The proposed building would be programmed and designed to provide instructional facilities for medical education and other allied healthcare-related courses that can evolve as these programs mature. Space types would be functionally programmed to serve dual and triple uses to ensure that as research priorities change and the medical education program progresses towards accreditation, the campus fully utilizes the capacity that the proposed building would provide. The building would be designed to facilitate vibrant and interactive collaboration among researchers, students across all levels, instructors, and the community. The proposed building would provide multiple areas for learning and collaborating, including multiple distance learning classrooms, a community sample collection and analysis lab, developmental psychology intake labs, social sciences faculty research labs, clinical practicum spaces, digital anatomy, simulation trainer environments, and a café.

The proposed building would be a four-story (approximately 55 feet in height [50 feet plus a 5-foot parapet]) structure with a partial basement. The first floor would be occupied by the Public Health and Psychological Sciences Departments and the Medical Education program, and also include an auditorium, lecture halls, wet labs, core space, a lobby, a café, and a receiving dock. The second floor would be occupied by seminar rooms and collaboration areas. The top two stories would include faculty offices, social science research labs, computational labs, core space, and collaboration areas. The basement would house a vivarium, anatomy lab, computer labs, chemical waste storage, canister gas storage, and a receiving dock.

The proposed building would be designed to be consistent with goals of the 2020 LRDP, follow the design guidance in the campus Physical Design Framework, and will be an important campus addition that will serve as a place for engagement of and interaction with the community. The architectural design of the new building would adhere to the campus aesthetic vision and reflect UC Merced's vision for a distinctive environment that is dynamic and engaging for learning, living, and working. The arrangement of building design elements would emphasize academic-oriented social interactions in ways that reinforce interactive learning. The proposed building would create a visual connection with strong building lines, complementary forms and careful arrangement of building massing. The proposed building would be oriented towards existing academic core buildings, view corridors, and open spaces to facilitate "way-finding." In addition, the public spaces would be designed to expand the visual experience for users, with the orientation towards views and campus landmarks. The proposed building would incorporate visible entryways, arcades and common spaces to engage the public at the ground level. The proposed building would incorporate bird-safe design practices to reduce potential injury or mortality impacts to birds from building strikes.

2.4.2 Project Sustainability

The proposed building would comply with the University of California Policy on Sustainable Practices (Sustainability Policy) and the Campus's sustainable practice design guidelines. Project sustainability targets and goals include Leadership in Energy and Environmental Design (LEED) minimum building certification level of Gold under the LEED Green Building Rating System, with incentives for Platinum.

The Campus anticipates that the proposed building would be its first fully electrified project. UC Merced will study whether a fully electrified research building can be more energy efficient as a standalone building as opposed to tiering into UC Merced's already highly efficient Central Plant for

provision of heat and chilled water. The proposed Project would outperform the California Energy Code by 20 percent or better as required by Sustainability Policy and would also meet UC's Whole Building Energy Performance Targets. The 2020 LRDP establishes a "triple zero commitment" to produce zero net emissions, zero waste, and zero net water. Strategies to maintain this commitment would be studied during the design phases of the Project.

2.4.3 Roadway and Pedestrian Access, On-Site Circulation, and Parking

The site planning and other aspects of the proposed HBS-ME Building would ensure the integration of the new building within the existing campus fabric. The site selection criteria that were used to identify the preferred site included the following: site suitability to ensure compatibility with the physical context of the campus; location and proximity to the academic core; pedestrian access; community access; future site considerations, and infrastructure connections.

Automobile access to the site would be via Cottonwood Loop Road and the Bellevue Road extension. The research vision for the proposed HBS-ME Building requires design that is sensitive to access by the general community, including children and disabled individuals. To facilitate community participation in research studies in developmental psychology and community-based public health initiatives, parking would be provided adjacent to the proposed building with direct access to Cottonwood Loop Road.

The proposed Project would also include bicycle spaces, showers, and locker rooms in order to encourage the use of bicycles for travel to the site. Public transportation would be available through the UC Merced shuttle system. The shuttle provides service to downtown Merced. The transit hub at the campus Health and Athletics Center north of the Bellevue Road extension would be the shuttle stop that is nearest to the proposed HBS-ME Building.

2.4.4 Hazardous Waste

The proposed Project would include laboratory research and the use of hazardous chemicals as well as radioactive materials; animal testing procedures would also be included in the laboratory research work. These activities would generate hazardous waste, regulated medical waste, radioactive waste, and mixed waste that would require off campus disposal.

Hazardous wastes generated in the proposed HBS-ME Building would be managed in basement storage areas prior to packaging and preparation for transport by a licensed vendor directly to a Treatment, Storage, and Disposal Facility (TSDF) or alternatively transported to the central waste storage facility on campus. Waste management activities would be conducted in full compliance with all applicable local, state, and federal regulatory requirements to ensure compliant accumulation, storage, transport, treatment, and disposal. In addition, a variety of best management practices (BMPs) (e.g., building design elements to prevent runoff in the event of a spill or release of liquid waste, weekly inspections of containerized and stored waste, etc.) would help ensure these activities are conducted with minimal issues.

2.4.5 Project Population

It is anticipated that the maximum number of persons accommodated by the proposed building would be 2,811 students and 188 faculty and staff. Of the 2,811 students, 1,542 are existing undergrad and post-grad students enrolled in the Psychological Sciences and Public Health departments and about 1,269 would be new students. Of the 188 faculty and staff, 139 are existing faculty and staff in the Psychological Sciences and Public Health departments. Thus, 1,681 of the 2,999 persons that would occupy the proposed HBS-ME Building are already enrolled as students or employed by the Campus as of 2020, and therefore the net new population due to this Project would be on the order of about 1,318 persons.

Because the existing building space in the SSM Building that would be vacated by the Psychological Sciences and Public Health Departments when those departments move to the proposed HBS-ME Building would be backfilled by the Department of Economics and the SSM Building would be ultimately retrofitted into the School of Management, for the purposes of the analyses in this Initial Study, all students, faculty, and staff were conservatively assumed to be “new” or additional to the existing students and employees on the campus. Therefore, the proposed building is conservatively assumed to increase the daily population of the campus by about 2,999 persons.

The increase in campus enrollment due to the expanded and new programs in the HBS-ME building would not occur immediately upon the completion of the building but would occur over time. In other words, the estimated 1,269 new students associated with the HBS-ME Building or the total 2,811 students (which include the 1,269 new students and 1,542 existing students due to backfill of vacated space in the SSM Building) would be incrementally added to the campus population over a period of time.

2.4.6 Storm Water Detention Improvements

Development of the proposed building would increase the area of impervious surfaces at the Project site, as the site is currently not developed with impervious surfaces. The Project site is located in Cottonwood Meadow, which is used to manage storm water runoff from the campus. Cottonwood Meadow was engineered and constructed as a storm water management area with basins that detain storm water to allow for evaporation and groundwater recharge. The basins were designed to detain runoff from the 100-year, 24-hour storm event. During severe storm events greater than the 100-year storm, an emergency overflow structure discharges excess flows to an unnamed tributary to Cottonwood Creek south of the campus. Discharge overflow may also be stored in a storm water basin located south of the Bellevue Road parking lot.

The proposed Project would affect the Cottonwood Meadow storm water management system in two ways: first, it would add impervious surfaces that would potentially increase the amount of storm water that is discharged into the retention/detention basins in Cottonwood Meadow; and, second, the Project development would intrude into the area currently used for detention, resulting in a decrease in the detention capacity and change for the design storm event. As such, the proposed Project includes modifications to the Cottonwood Meadow detention basins to provide added detention capacity to serve storm water runoff from the proposed Project along with providing detention capacity for the capacity that would be removed.

2.4.7 Project Construction

Project construction is anticipated to occur over a 36-month period beginning in spring 2023 and continuing through mid-2025. Construction would take place Monday through Friday and would involve typical construction hours that extend from early morning through mid-afternoon.

As shown in **Figure 2**, construction staging would occur within an approximately 18-acre portion of the campus that was recently disturbed as part of the 2020 Project. The staging area, which is located east of Cottonwood Loop Road and south of Bellevue Road, is centrally situated adjacent to the proposed building and the Cottonwood Meadow storm water management area.

3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by the proposed Project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist in **Section 5.0**. The checked environmental factors will be discussed in the Project EIR. For the remaining environmental factors, the analysis in Section 5.0 supports the determination that the Project would have no impact or a less than significant impact, or that impacts would be less than significant with implementation of required mitigation measures. Therefore, these environmental factors will not be further evaluated in the Project EIR.

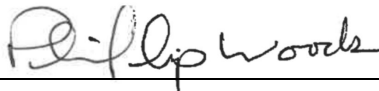
- | | | |
|---|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials |
| <input checked="" type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input checked="" type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input checked="" type="checkbox"/> Transportation | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input checked="" type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

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4.0 DETERMINATION

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☒ I find that the proposed project MAY have a "Potentially Significant Impact" or "Potentially Significant Unless Mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature

April 2, 2021

Date

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5.0 EVALUATION OF ENVIRONMENTAL IMPACTS

5.1 APPROACH TO THE IMPACT ANALYSIS

The proposed Project would serve and fit within the growth projections of the 2020 LRDP; as such, where possible, this environmental document tiers off the 2020 LRDP SEIR and the 2009 LRDP EIS/EIR. Many of the environmental topics discussed in this Initial Study will not be further evaluated in the Project EIR. This approach is used because under a number of issue topics, the proposed Project would not result in a new or more severe project impact than the programmatic impacts of the LRDP identified in the 2020 LRDP SEIR and the 2009 LRDP EIS/EIR. Mitigation measures adopted by The Regents in conjunction with the approval of the 2020 LRDP that are relevant to the proposed Project have been included in and are a part of the proposed Project. The analysis presented in **Sections 5.3 through 5.23** evaluates environmental impacts that would result from proposed Project implementation following the application of the 2020 LRDP SEIR mitigation measures as standard Project features. These mitigation measures are a part of the proposed Project and will not be readopted.

5.2 DETERMINATION OF SIGNIFICANCE

The Environmental Checklist uses the following response headings to identify potential environmental effects that will be addressed in the Project EIR.

Impact to be analyzed in the EIR: This category includes those impacts that were previously evaluated in the 2020 LRDP SEIR and the 2009 LRDP EIS/EIR but it cannot be determined at the time that this Initial Study was prepared whether the impacts associated with the proposed Project are adequately addressed by the previous analyses. It includes effects that are determined to be potentially significant. The effect may be an impact for which further analysis is necessary or desirable before a determination of significance can be made; an impact that is potentially significant but may be reduced to a less-than-significant level with the adoption of mitigation measures; or an impact that may be significant and unavoidable.

No Additional Analysis in the EIR Required: This category includes those impacts that were sufficiently analyzed in the 2020 LRDP SEIR and the 2009 LRDP EIS/EIR for which the proposed HBS-ME Building Project would not increase the severity of the previously analyzed impacts or result in new impacts. It also includes environmental topics where the Project would clearly not result in an impact or would clearly result in a less-than-significant impact under CEQA, and no additional analysis in the Project EIR beyond that provided in this Initial Study is necessary.

5.3 AESTHETICS

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Except as provided in Public Resources Code Section 21099, would the project:		
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.3.1 Impact Analysis

a. Would the project have a substantial effect on a scenic vista?

A scenic vista is generally defined as an expansive view of highly valued landscape as observable from a publicly accessible vantage point. The area around the UC Merced campus is primarily agricultural with views of the Sierra Nevada Mountains in the distance. Previous analysis in the 2020 LRDP SEIR concluded that impacts to scenic vistas from future development on the campus could be reduced to a less-than-significant level with implementation of **2020 LRDP Mitigation Measures AES-1b** and **AES-3a** (see **Section 5.3.3**). The proposed Project would be developed on a portion of the campus that is designated CMU. The proposed building and other facilities associated with the proposed Project would be located near the existing academic core and would be similar in height and scale to other development in the southeastern portion of the campus, where building heights range between approximately 45 and 80 feet in height. The proposed building would be a four-story building that would be about 55 feet in height and would not be taller than any of the other surrounding buildings in this portion of the campus. Further, **2020 LRDP Mitigation Measures AES-1b** and **AES-3a** would be incorporated into the proposed Project to reduce impacts on scenic vistas. As such, development of the proposed Project would not have a substantial adverse effect on a scenic vista. The impact would be **less than significant** and further evaluation in the Project EIR is not required.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The Project site, which is located within the existing UC Merced campus, is not adjacent to or within view of a State scenic highway and therefore, implementation of the proposed Project would not result in any impacts on scenic resources within a State scenic highway. Furthermore, there are no unique trees, rocky outcrops or historic buildings within the Project footprint that could qualify as a scenic resource. As a result, **no impact** on scenic resources within a State scenic highway would occur, and further evaluation in the Project EIR is not required.

- c. In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

The proposed Project is located on the UC Merced campus in a non-urbanized area within the sphere of influence of the City of Merced. The visual character of the campus surrounding the Project site includes student housing and academic buildings to the north and west, Cottonwood Meadow, and undeveloped campus lands and conservation lands to the south and east. The Project footprint, which includes the proposed building area and storm water facilities, has already been disturbed and is not occupied by natural features that enhance the visual character above that of other developed portions of the UC Merced campus. As discussed in the Initial Study prepared as part of the 2020 LRDP SEIR, development of facilities, such as the proposed Project, on CMU designated land would not result in any greater impacts on visual character or quality than previously analyzed in the 2009 LRDP EIS/EIR. The proposed building would be designed to be consistent with goals of the 2020 LRDP and follow the design guidance in the campus Physical Design Framework. The architectural design of the proposed building would adhere to the campus aesthetic vision and reflect UC Merced's vision for a distinctive environment that is dynamic and engaging for learning, living, and working. The arrangement of building design elements would emphasize academic-oriented social interactions in ways that reinforce interactive learning. The proposed building would create a visual connection with strong building lines, complementary forms, and careful arrangement of building massing. The proposed building would be oriented towards existing academic core buildings, view corridors, and open spaces to facilitate "way-finding." In addition, any public spaces associated with the proposed Project would be designed to expand the visual experience for users, with the orientation towards views and campus landmarks. The proposed building would incorporate visible entryways, arcades and common spaces to engage the public at the ground level. Finally, the proposed Project would implement **2020 LRDP Mitigation Measure AES-3a** to ensure the new building and associated infrastructure improvements meet UC Merced design standards.

Implementation of the proposed Project would not substantially degrade the existing visual character or quality of public views of the site and UC Merced campus. The impact would be **less than significant** and further evaluation in the Project EIR is not required.

- d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Impacts related to light and glare from the development of the UC Merced campus were analyzed in the Initial Study prepared for the 2020 LRDP SEIR. The area where the proposed Project would be located, within the CMU designated area of the campus, would not result in any greater light or glare impacts than other developed portions of the campus. The proposed building would be designed to be consistent with goals of the 2020 LRDP and follow the design guidance in the campus Physical Design Framework (i.e., "dark-sky" friendly lighting). Any lighting proposed for the outside of the proposed building would be designed to be directed downward to avoid spill over. The proposed building and window façades would be developed with materials that do not generate

glare. The guidelines of the 2020 LRDP would also be implemented for building design to reduce glare and excessive lighting.

Implementation of the proposed Project would not create a new source of substantial light or glare which would adversely affect daytime or nighttime views on the UC Merced campus and surrounding off-campus area. The impact would be **less than significant** and further evaluation in the Project EIR is not required.

5.3.2 Cumulative Impacts

As discussed above, the impacts of the proposed Project are adequately analyzed in the 2009 LRDP EIS/EIR and 2020 LRDP SEIR, and the Project would not result in new or more severe impacts on visual resources. Therefore, the cumulative impacts of the Project are also fully analyzed in the 2009 LRDP EIS/EIR and 2020 LRDP SEIR. There are no changes in circumstances since the 2009 and the 2020 analysis that would change the conclusions of the prior cumulative analysis. Further evaluation of cumulative aesthetic impacts in the Project EIR is not required.

5.3.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures that were adopted at the time of the approval of the 2009 LRDP and/or the 2020 LRDP would apply to the proposed Project:

2020 LRDP MM AES-1b: Where possible, major vehicular and pedestrian transportation corridors on the Campus shall be located and designed to provide views of the Sierra Nevada.

2020 LRDP MM AES-3a: The University shall design all new aboveground infrastructure on the Campus to the following standards: (a) Screen aboveground infrastructure from view from public rights-of-way or scenic vistas, via landscaping, fencing or other architectural screening; (b) Require creative design measures to camouflage structures by integrating them with existing buildings and among other existing uses; (c) Locate aboveground infrastructure on sites that are not visible from visually sensitive areas, such as residential communities and open space areas; (d) Require providers to co-locate their structure on a single site, where technically feasible and visually desirable; and (e) Locate antennae and equipment on other existing community facility sites, such as water tanks or utility poles.

5.3.4 Project Specific Mitigation Measures Not included in the 2020 LRDP SEIR

As the Project would not result in any new or more severe aesthetic impacts than the impacts that were previously analyzed and disclosed in the 2009 LRDP EIS/EIR and 2020 LRDP SEIR, no Project-specific mitigation measures are required.

5.4 AGRICULTURE AND FORESTRY RESOURCES

CEQA Guidelines state that in determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.4.1 Impact Analysis

- a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

Impacts on farmland were analyzed in the 2009 LRDP EIS/EIR and in the Initial Study for the 2020 LRDP SEIR. The analysis was based on the Farmland Mapping and Monitoring Program (FMMP) of the California Department of Conservation, which maps the distribution of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance (collectively known as Important Farmland) on a biannual basis. The analysis concluded that approximately 40 acres of Important Farmland would be impacted by buildout of the UC Merced campus under the 2020 LRDP. However, this impact was not considered significant because the University has already placed a substantial number of acres of land in eastern Merced County under conservation easements. The most current Important Farmland data for Merced County is from 2016.¹⁰ According to the FMMP, the Campus is designated

¹⁰ California Department of Conservation, Farmland Mapping and Monitoring Program, 2016 Merced County, <https://www.conservation.ca.gov/dlrp/fmmp>. Accessed November 18, 2021.

“Other Land,” and the Project site is designated as Vacant or Disturbed Land (V) under the Rural Land Mapping Project, which provides more detail on the distribution of the Other Land (X) category in nine California counties, including Merced County. Designated (V) land is defined as, “open field areas that do not qualify as an agricultural category, mineral and oil extraction areas, off road vehicle areas, electrical substations, channelized canals, and rural freeway interchanges.”¹¹ As the Project site is not in an area designated as Important Farmland, implementation of the proposed Project would not convert Important Farmland to non-agricultural uses. **No impact** would occur and no additional analysis is required in the Project EIR.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The UC Merced campus and Project site is zoned by the County of Merced as Exclusive Agricultural (A-2); however, as the campus and site are State owned, the County Zoning code does not apply. The 2020 LRDP SEIR determined that the UC Merced campus, including the Project site, is not under a Williamson Act contract. As such, implementation of the proposed Project would not conflict with existing zoning for agricultural use nor would it conflict with a Williamson Act contract. **No impact** would occur and no additional analysis is required in the Project EIR.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

The UC Merced campus and Project site are not zoned for/as forest land, timberland, or timberland zoned Timberland Production. As such, implementation of the proposed Project would not conflict with existing forestland/timberland zoning designations/uses. **No impact** would occur and no additional analysis is required in the Project EIR.

d. Would the project result in the loss of forest land or conversion of forestland to non-forest use?

The UC Merced campus is developed with buildings and associated improvements as well as open space. The Project site is primarily vacant although some areas are currently used for storm water detention or as construction staging areas for other construction projects on the UC Merced campus. There is no forest land on the UC Merced campus nor on the Project site. As such, implementation of the proposed Project would not result in the loss of forest land or conversion of forest land to non-forest use. **No impact** would occur and no additional analysis is required in the Project EIR.

¹¹ California Department of Conservation, FMMP – Rural Land Mapping Project, https://www.conservation.ca.gov/dlrp/fmmp/Pages/rural_land_mapping.aspx. Website accessed January, 18, 2021.

- e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?*

The Project site does not contain farmland nor forestland. Areas around the Project site (off the UC Merced campus) do not include forestland although they do include some farmland. However, implementation of the proposed Project would not involve other changes in the existing environment that would result in conversion of nearby farmland (e.g., existing agricultural uses directly south of the campus) to non-agricultural use. **No impact** would occur and no additional analysis is required in the Project EIR.

5.4.2 Cumulative Impacts

The 2020 LRDP SEIR concluded that past, present and reasonably foreseeable development in Merced County, including campus development under the 2020 LRDP, would result in a significant cumulative impact with respect to the loss of Important Farmland. However, UC Merced has already placed substantial number of acres of land in eastern Merced County under conservation easements for the protection of biological resources. There are approximately 70 acres of Important Farmlands and approximately 26,435 acres of grazing land within the Conservation Lands that have been permanently protected from development. There are no changes in circumstances since the prior analysis that would alter the conclusions of that analysis. Furthermore, the Project site is not designated as Important Farmland; as such, the proposed Project would not contribute to the cumulative impact associated with the conversion of Important Farmland in the County or in California. The Project site is not zoned for forestland use nor is it occupied by forestland or timberland. As such, implementation of the proposed Project would not contribute to the cumulative impact associated with the loss of forestland in the County or in California. Further evaluation of cumulative agriculture and forestland impacts in the Project EIR is not required.

5.4.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The 2020 LRDP SEIR did not include mitigation measures under this environmental topic as no potentially significant impacts associated with agriculture and forestry resources were identified.

5.4.4 Project Specific Mitigation Measures Not included in the 2020 LRDP SEIR

As the proposed Project would not result in any new or more severe impacts to agricultural and forestry resources than the impacts that were previously analyzed and disclosed in the 2020 LRDP SEIR, no Project-specific mitigation measures are required.

5.5 AIR QUALITY

According to the CEQA Guidelines, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Expose sensitive receptors to substantial pollutant concentrations?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.5.1 Impact Analysis

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

The 2020 LRDP SEIR analyzed the potential for campus development under the 2020 LRDP to result in emissions that would exceed applicable thresholds and would represent emissions that are not accounted for in the regional air quality plans. Although the proposed Project is accounted for under the population and building space buildout projections for the 2020 LRDP, project-level analysis is required to determine if the proposed Project as an individual project would conflict with or obstruct implementation of the applicable air quality plan covering the UC Merced campus in conjunction with the vehicle miles travelled (VMT) analysis that will be conducted for the Project as described in **Section 5.19**, Transportation, of this Initial Study. The Project EIR will include an analysis of both construction and operational emissions that would be estimated using the California Emissions Estimator Model (CalEEMod) and compared to quantitative thresholds to determine the level of significance of this impact. The San Joaquin Valley Air Pollution Control District (SJVAPCD) has established air quality significance thresholds that can be used by a lead agency to determine whether air quality impacts from implementing proposed projects will be significant. These thresholds are contained in the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) and will be used to evaluate the impact from emissions associated implementation of the proposed Project. Appropriate project-level mitigation will be proposed, if necessary.

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

For the same reason presented above in **Section 5.5.1.a**, potential short-term (i.e., construction) and long-term (i.e., operational) air quality impacts from the implementation of the proposed Project will be evaluated in the Project EIR. As noted above, CalEEMod will be used to estimate and report in the Project EIR the construction and operational emissions that could result from the

implementation of the proposed Project, and the estimated emissions will be compared to significance thresholds provided by the local air district.

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Construction and operation of the proposed Project under the 2020 LRDP could result in exposure of sensitive receptors to substantial concentrations of carbon monoxide (CO) due to traffic. The Project EIR will describe whether or not project-related traffic would result in CO concentrations in excess of established standards. It is possible that development of the proposed Project under the 2020 LRDP could include sources that emit toxic air contaminants (TACs). As a result, construction and operation of the proposed Project could expose sensitive receptors on- and off-campus to substantial pollutant concentrations of TACs. The Project EIR will include an evaluation of project-related traffic and TAC sources and their potential to result in substantial pollutant concentrations that could affect sensitive receptors.

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Construction of the proposed Project would require the use of diesel-fueled equipment and architectural coatings, both of which generate odors. However, these odors would be short-term and temporary and would not be pervasive enough to affect a substantial number of people. Routine operation of the proposed Project would not involve activities that typically produce odors such as wastewater treatment, manufacturing, agriculture, etc. Occasional use of maintenance products around and within the proposed building could produce localized odors, but they would be temporary and limited in area. In addition, the proposed Project would include laboratory fume hoods; however, these fume hoods would be required to comply with standards for determining permissible exposure limits and would not create odors or other emissions that could affect a substantial number of persons. Consequently, short-term construction and long-term operation of the proposed Project would not create odors that could affect a substantial number of persons, nor would the proposed Project expose Project site occupants to substantial odors, and the impact would be **less than significant**. No additional analysis is required in the Project EIR.

5.5.2 Cumulative Impacts

As discussed above, the proposed Project would not create new odors affecting a substantial number of people; therefore, the proposed Project would not contribute to a cumulative impact with respect to this topic. The potential for a significant cumulative impact on air quality from emissions from the proposed Project, other development on the campus under the 2020 LRDP, and other existing and reasonably foreseeable local development projects that could adversely affect air quality will be addressed in the Project EIR.

5.5.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The Project EIR will analyze potential air quality impacts generated by the proposed Project during construction and operations. The following mitigation measures that were adopted at the time of the approval of the 2020 LRDP (as shown below) may be applicable to the proposed Project and their application will be confirmed in the Project EIR.

2020 LRDP MM AQ-1a: The construction contractors shall be required via contract specifications to use construction equipment rated by the U.S. EPA as meeting Tier 4 (model year 2008 or newer) emission limits for engines between 50 and 750 horsepower.

2020 LRDP MM AQ-1b: UC Merced shall include in all construction contracts the measures specified in SJVAPCD Regulation VIII (as it may be amended for application to all construction projects generally) to reduce fugitive dust impacts, including but not limited to the following:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions using application of water or by presoaking.
- When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least 6 inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit visible dust emissions. Use of blower devices is expressly forbidden.)
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, storage piles shall be effectively stabilized of fugitive dust emissions by using sufficient water or chemical stabilizer/ suppressant.

2020 LRDP MM AQ-2a: UC Merced shall implement the following measures to reduce emissions from vehicles:

- Provide pedestrian-enhancing infrastructure to encourage pedestrian activity and discourage vehicle use.
- Provide bicycle facilities to encourage bicycle use instead of driving, such as bicycle parking, bicycle lanes, bicycle lockers; and showers and changing facilities for employees.
- Provide preferential carpool and vanpool parking for non-residential uses.

- Provide transit-enhancing infrastructure to promote the use of public transportation, such as covered bus stops and information kiosks.
- Provide facilities, such as electric car charging stations and a CNG refueling station, to encourage the use of alternative-fuel vehicles.
- Improve traffic flows and congestion by timing of traffic signals at intersections adjacent to the campus to facilitate uninterrupted travel.
- Work with campus transit provider to replace CatTracks buses with either electric buses or buses operated on alternative fuels.
- Work with the City of Merced to establish park and ride lots and provide enhanced transit service between the park and ride lots and the campus.
- Replace campus fleet vehicles with electric vehicles or vehicles that operate on alternative fuels.
- Reduce the number of daily vehicle trips by providing more housing on campus.

2020 LRDP MM AQ-2b: UC Merced shall implement the following measures to reduce emissions from area and energy sources, as feasible:

- Utilize low-VOC cleaning supplies and low-VOC paints (100 grams/liter or less) in building maintenance.
- Utilize electric equipment for landscape maintenance.
- Plant low maintenance landscaping.
- Implement a public information program for resident students to minimize the use of personal consumer products that result in ROG emissions, including information on alternate products.
- Instead of natural gas water heaters, install solar water heating systems.

Cumulative MM C-AQ-1: Implement LRDP MM AQ-2a and AQ-2b.

5.5.4 Project Specific Mitigation Measures Not included in the 2020 LRDP SEIR

The Project EIR will analyze air quality impacts associated with the proposed Project and Project specific mitigation measures will be identified, if warranted.

5.6 BIOLOGICAL RESOURCES

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.6.1 Impact Analysis

- a. *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Impacts on biological resources, including special-status plant and wildlife species, that would occur with development of the campus, were evaluated in the 2020 LRDP SEIR. The portion of the Project site proposed for construction of the proposed HBS-ME Building, which is located within an area designated for development by the 2020 LRDP, was previously graded and developed for storm water management or used for construction access and staging as part of the 2020 Project. Thus, the vernal pool and swale complexes that historically occurred within the Project site no longer exist. Existing land cover types within the Project area, as described in the 2020 LRDP SEIR, include California annual grassland and developed or landscaped areas. The Fairfield Canal and a fringe riparian vegetation zone is located to the east of the Project site. Suitable habitat for special-status plant and wildlife species within the Project site is primarily associated with the constructed detention basins used to manage campus storm water runoff and the grassland areas with recently planted landscape trees and shrubs throughout Cottonwood Meadow.

Table 2 lists the special-status species with the potential to occur within or in the vicinity of the Project area. This assessment is based on recent preconstruction surveys and biological monitoring conducted between 2015 and 2020 for the 2020 Project, consistent with the mitigation measures in the 2009 LRDP EIS/EIR, the 2020 LRDP SEIR, as well as the conditions specified by UC Merced's existing State and federal permits for campus development. Updated species lists from the U.S. Fish

and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC)¹², California Natural Diversity Data Base (CNDDB)¹³, and California Native Plant Society Online Database¹⁴ were also reviewed.

Table 2: Special-Status Animal and Plant Species with the Potential to Occur Within or in the Vicinity of the Project Site

Name	Scientific Name	Listing ¹		
		Federal	State	Other
Plants				
Colusa grass	<i>Neostapfia colusana</i>	T	E	1B.1
Dwarf dowingia	<i>Downingia pusilla</i>	--	--	1B.2
San Joaquin valley orcutt grass	<i>Orcuttia inaequalis</i>	T	E	1B.1
Shining navarretia	<i>Navarretia nigelliformis radians</i>	--	--	1B.1
Succulent owl’s clover	<i>Castilleja campestris ssp. succulenta</i>	T	E	1B.1
Wildlife				
Bald eagle	<i>Haliaeetus leucocephalus</i>	--	E, FP	--
Burrowing owl	<i>Athene cunicularia</i>	--	SSC	--
California horned lark	<i>Eremophila alpestris actia</i>	--	SSC	--
California tiger salamander	<i>Ambystoma californiense</i>	T	T	--
Crotch bumble bee	<i>Bombus crotchii</i>	--	CE	--
Ferruginous hawk	<i>Buteo regalis</i>	--	SSC	--
Golden eagle	<i>Aquila chrysaetos</i>	--	FP	--
Loggerhead shrike	<i>Lanius ludovicianus</i>	--	SSC	--
Mountain plover	<i>Charadrius montanus</i>	--	SSC	--
Northern harrier	<i>Circus cyaneus</i>	--	SSC	--
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	E	T	--
Short-eared owl	<i>Asio flammeus</i>	--	SSC	--
Swainson’s hawk	<i>Buteo swainsoni</i>	--	T	--
Tricolored blackbird	<i>Agelaius tricolor</i>	--	T	--
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T	--	--
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	E	--	--
White-tailed kite	<i>Elanus leucurus</i>	--	FP	--
Western pond turtle	<i>Actinemys marmorata</i>	--	SSC	--
Western spadefoot	<i>Spea hammondii</i>	--	SSC	--

¹ Endangered (E), Threatened (T), Candidate for Listing (C), Species of Special Concern (SSC), Fully Protected (FP), California Rare Plant Rank 1B.1, 1B.2

- ¹² U.S. Fish and Wildlife Service. 2021. Information for Planning and Consultation (IPaC) Online Threatened and Endangered Species Lists. Sacramento Fish and Wildlife Office. Records search executed February 1, 2021.
- ¹³ California Department of Fish and Wildlife (CDFW). 2021. California Natural Diversity Database - Rarefind 5 online computer program. Sacramento, CA. Records search executed February 1, 2021. Sacramento, California.
- ¹⁴ California Native Plant Society, Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website: <http://www.rareplants.cnps.org>. Accessed on February 1, 2021.

A discussion of the potential for these species to occur, based on the analysis in the 2020 LRDP SEIR, is included below.

Special-Status Plant Species. As described in Section 4.2 of the 2020 LRDP SEIR, although potentially suitable habitat exists within undeveloped areas of the overall 1,026-acre campus site for 17 special-status plant species, surveys conducted to date (including those conducted in advance of the 2009 LRDP EIS/EIR and for the 2020 Project, as reflected in Table 4.2-4 of the 2020 LRDP SEIR) have not identified many of these species within the campus site. The 2020 LRDP SEIR reflects that five special-status plant species—succulent owl’s clover (*Castilleja campestris* ssp. *succulent*), Colusa grass (*Neostapfia colusana*), San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*), dwarf downingia (*Downingia pusilla*), and shining navarretia (*Navarretia nigelliformis* subsp. *radians*)—are known to occur within the vicinity of the Project area based on documented sightings. However, all species are associated with vernal pool or clay flat wetland habitat, which was previously graded and filled as part of the 2020 Project. While the constructed detention basins may still provide marginally suitable habitat for these special-status plants based on the presence of an underlying clay hardpan layer and any remaining seed bank, these species are not anticipated to occur. Focused preconstruction surveys conducted within the 2020 Project area for state-listed succulent owl’s clover, Colusa grass, and San Joaquin Valley Orcutt grass, as required by UC Merced’s Incidental Take Permit (ITP) (No. 2081-2009-010-04)¹⁵ and documented in the 2020 LRDP SEIR, did not identify these species. These species were also not detected within the existing storm water management areas during botanical surveys conducted in advance of initial campus development.¹⁶ The presumed extant occurrences of shining navarretia and dwarf downingia, based on previous surveys, are located more than 0.25 mile to the north and south of the Project area. Finally, UC Merced has already fully compensated for the loss of habitat for special-status plant species. The 2020 LRDP SEIR documents UC Merced’s compensation for the loss of special-status vernal pool plant species as a result of overall campus development (i.e., preservation of nearly 24,000 acres of Tier 1 and Tier 2 Conservation Lands with suitable habitat).

As the Project site was previously graded, the loss of special-status plant habitat was previously compensated for, and all campus development, including the proposed Project, would be subject to the conditions specified by UC Merced’s ITP (i.e., preconstruction surveys, plant salvage and relocation), the proposed Project’s impacts on special-status plant species would be **less than significant**. No additional analysis is required in the Project EIR.

Special-Status Wildlife Species. The Project’s potential to impact special-status wildlife species is described below.

Special-Status Amphibians and Reptiles. As described in Section 4.2 of the 2020 LRDP SEIR, California tiger salamander (CTS) (*Ambystoma californiense*), western pond turtle (*Actinemys marmorata*), and western spadefoot (*Spea hammondi*) are known to occur within the vicinity of the Project area based on documented sightings. Both western pond turtle and western

¹⁵ California Department of Fish and Wildlife. 2011. *Incidental Take Permit for the University of California, Merced Campus and Community North Project (with amendments)*. (2081-2009-010-04). Fresno, CA.

¹⁶ EIP Associates. 2001. UC Merced/University Community Plan 2001 Special-Status Plant Survey Report. August. (10300-13.JH.) Prepared for University of California and Merced County. Sacramento, CA.

spadefoot are State species of special concern, while CTS is both State- and federally-listed as threatened.

California Tiger Salamander. All undeveloped areas within the 1,026-acre campus site that were evaluated in the 2020 LRDP SEIR are considered occupied upland habitat for CTS. As described in the 2020 LRDP SEIR, 171 acres of the campus site have been previously graded or developed, which includes the proposed Project building site and associated improvement areas. However, UC Merced has already mitigated for the loss of 1,648 acres of CTS upland habitat via the preservation of nearly 17,600 acres of Conservation Lands. Therefore, due to the mitigation that has already been put in place, the Project would have **no impact** related to the loss of CTS upland habitat. No additional analysis is required in the Project EIR.

While individual CTS is unlikely to occur within the Project site due to the previous disturbance and the existing exclusion fencing that was installed as part of the 2020 Project, their occurrence within the Project site cannot be ruled out due to known or potential breeding ponds to the north and east. Project implementation could thus result in injury or mortality to individual CTS. UC Merced's existing ITP and Biological Opinion (BO) (USFWS file number 1-1-02-F-0107)¹⁷ contain a number of measures to avoid and minimize take of CTS. These measures include requirements for a USFWS and California Department of Fish and Wildlife (CDFW)-approved Designated Biologist to conduct preconstruction surveys, excavate small mammal burrows, and monitor construction activities. UC Merced also provides an education program for all workers on the construction site that describes CTS and measures that must be implemented to protect this species. A CTS relocation plan has been developed and approved to salvage individual CTS found within the campus site. The ITP also requires the installation of a CTS exclusion fence around construction sites and excavation of small mammal burrows within 0.25-mile of known or potential CTS breeding habitat (ITP Amendment No. 3). UC Merced would continue to implement all requirements of the ITP and BO as part of the proposed Project. Therefore, the Project would have a **less-than-significant** impact on CTS during construction. No additional analysis is required in the Project EIR.

Western Spadefoot. Habitats suitable for CTS are often also suitable for western spadefoot. However, hand excavation of burrows on the 2020 Project site and extensive dip net surveys of aquatic features on the adjacent Tier 1(a) Conservation Lands have not resulted in the detection of western spadefoot. Therefore, it is not expected that western spadefoot would be affected either directly or indirectly by the proposed Project. Furthermore, the avoidance and protection measures for CTS would also help protect this species, should an individual enter a work site. Therefore, the Project impact on western spadefoot would be **less than significant**. No additional analysis is required in the Project EIR.

Western Pond Turtle. As described in the 2020 LRDP SEIR, UC Merced has already compensated for the loss of western pond turtle habitat through the preservation of at least 175 acres of suitable habitat on the Tier 1(a) and Tier 2 Conservation Lands. While the Project area was

¹⁷ U.S. Fish and Wildlife Service. 2002. *Final Biological Opinion on the Proposed University of California Merced Campus, Phase 1 and Campus Buildout (amended in 2009)*. August 19. (1-1-02-I-2926.) Sacramento, CA.

previously graded and developed as part of the 2020 Project, Western pond turtle is known from an existing campus storm water basin north of the Project area and this species could potentially occur within the existing storm water basins within the Project site. Additional potential suitable habitat for this species along the Fairfield Canal is located outside of the Project area.

With respect to the potential for Project construction activities to result in injury or mortality of the species, UC Merced's 2009 Construction Mitigation Plan (CMP)¹⁸, which is a requirement of the BO, requires that a biologist conduct preconstruction surveys for western pond turtle prior to initial ground-disturbing activities in all suitable aquatic habitats within 100 feet of the work area. If pond turtles are not observed, no additional mitigation is required. If pond turtles are observed, they would be allowed to move out of the way on their own. If active nests are found, they would be fenced with an appropriate buffer and avoided until the young have hatched and are able to move out of the work area on their own. With the implementation of this CMP measure, potential Project impacts to western pond turtle would be **less than significant**. No additional analysis is required in the Project EIR.

Special-Status Birds and Nesting Birds. Several special-status bird species (as listed in **Table 2**) and common birds could nest on the ground, within burrows, and in tree and shrub vegetation on the Project site or vicinity (e.g., within riparian vegetation along the Fairfield Canal). Active nests of all native bird species are protected under the federal Migratory Bird Treaty Act (MBTA) and Section 3503 of the California Fish and Game Code (CFGC), which prohibits the take, possession, or needless destruction of the nest or eggs of any bird.

As described in the 2020 LRDP SEIR, special-status birds known to nest on or near the campus include burrowing owl, Swainson's hawk, and tricolored blackbird. In April 2018, a Swainson's hawk nest was identified in a tree east of Fairfield Canal, within approximately 0.25 mile of the Project site. Other special-status birds for which there is suitable nesting habitat on and adjacent to the Project site include California horned lark, white-tailed kite, short-eared owl, and loggerhead shrike. The campus and adjacent lands also contain suitable nesting habitat for numerous non-special-status migratory birds, including red-tailed hawk (*Buteo jamaicensis*), red-winged blackbird (*Agelaius phoeniceus*), killdeer (*Charadrius vociferous*), mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), and cliff swallow (*Petrochelidon pyrrhonota*), whose nests are protected under the MBTA and CFGC Sections 3503 and 3503.5.

While no trees would be removed as part of the Project, additional grading and vegetation removal would occur on the site during Project construction. Project implementation has the potential to disturb active special-status and non-special-status migratory bird nests if ground-disturbing activities and/or construction occurs during the nesting season (generally February 15 through August 15). The destruction or disturbance of active nests resulting in nest failure or loss of individuals would be a potentially significant impact. However, **2020 LRDP Mitigation Measure BIO-9a**, which is set forth below in **Section 5.6.3**, as well as the conditions in UC Merced's ITP for Swainson's hawk (e.g., preconstruction nesting surveys, no disturbance buffers,

¹⁸ ICF Jones & Stokes 2009. *Final Construction Mitigation Plan for Biological Resources the University of California, Merced Project*. Prepared for University of California, Merced.

etc.), would be implemented to reduce potential impacts to special-status and non-special-status migratory bird nests to **less than significant**. No additional analysis is required in the Project EIR.

As described in the 2020 LRDP SEIR, UC Merced's location along the Pacific Flyway migratory route and its setting within a diverse environment that provides habitat for many resident bird species increases the potential for bird collisions with tall buildings on the campus. The proposed HBS-ME Building would be a four-story building and could include design features (e.g., reflective surfaces or breezeways) that could result in resident or migratory bird collisions resulting in bird injuries or mortality. **2020 LRDP Mitigation Measure BIO-9b**, which specifies bird safe design considerations, would be implemented to reduce potential impacts associated with bird collisions to **less than significant**. No additional analysis is required in the Project EIR.

Based on the areas identified in the 2020 LRDP for campus development (including the Project site), the loss of foraging habitat for Swainson's hawk and other special-status bird species from the development of the campus under the 2020 LRDP was estimated and reported in the 2020 LRDP SEIR. The SEIR also noted that UC Merced has preserved more than 20,000 acres of foraging habitat for Swainson's hawk and other bird species within the Tier 1 and Tier 2 Conservation Lands. As the Project site is included within the development area described and analyzed in the 2020 LRDP SEIR, the Project would result in **no impact** to foraging habitat for Swainson's hawk and other special-status bird species beyond what was previously identified. No additional analysis is required in the Project EIR.

Special-Status Invertebrates. As described in Section 4.2 of the 2020 LRDP SEIR, suitable habitat for vernal pool fairy shrimp (*Branchinecta lynchi*; federally-listed as threatened) and vernal pool tadpole shrimp (*Lepidurus packardii*; federally-listed as endangered) remains within the 1,026-acre campus site. Crotch bumble bee (*Bombus crotchii*) became a candidate endangered species under the California Endangered Species Act (CESA) in 2019. Remaining annual grassland areas within the campus, in particular those areas with fossorial (burrowing) mammal activity, provide potential nest sites for Crotch bumble bee.

Vernal Pool Crustaceans. Vernal pool fairy shrimp and vernal pool tadpole shrimp are associated with vernal pools that form in depressions, usually in grassland habitats. These species may also occur in other wetlands that provide habitat similar to vernal pools, such as alkaline rain pools, ephemeral drainages, rock outcrop pools, ditches, stream oxbows, stock ponds, vernal swales, and some seasonal wetlands. While vernal pool tadpole shrimp are not known from the 1,026-acre campus site based on previous surveys that were conducted prior to the development of the campus, vernal pool fairy shrimp were identified in the southern portion of the Project site near Bellevue Road. However, as described in the 2020 LRDP SEIR, previously extant vernal pools and swales that occurred within the Project site were graded and filled as a result of UC Merced's Phase 6 Project and, more recently, the 2020 Project. While the cysts (i.e., drought tolerant eggs) of these species may potentially remain in the soil where vernal pools occurred prior to grading for campus development, UC Merced has already fully compensated for the loss of habitat for these species. As reflected in the 2020 LRDP SEIR, the University has acquired nearly 24,000 acres of Conservation Lands that would protect 1,006 acres of occupied habitat for vernal pool fairy shrimp. Mitigation ratios achieved for direct and indirect impacts are 8:1 for

Tier 1(a) Conservation lands and 16:1 with the addition of the Tier 2 Conservation Lands, substantially above the 3:1 minimum target specified in the 2002 BO. Similarly, 14 acres of occupied habitat for vernal pool tadpole shrimp are being protected, reflecting a mitigation ratio of 3.5:1, which is above the 3:1 minimum target specified in the Conservation Measures in the 2002 BO. Therefore, the Project impact on vernal pool fairy shrimp and vernal pool tadpole shrimp is accounted for under the impacts of the 2020 LRDP and fully compensated by the mitigation that has been already implemented. The Project's impact would be **less than significant**. No additional analysis is required in the Project EIR.

Crotch Bumble Bee. As reflected in Section 4.2 of the 2020 LRDP SEIR, the California Fish and Game Commission (Commission) made a decision at its June 12, 2019 meeting to accept for consideration the petition to list four species of bumble bees, including Crotch bumble bee, under CESA. As such, Crotch bumble bee became a candidate endangered species under CESA, temporarily affording it the same protection as state-listed species.¹⁹ While there have been no documented observations of Crotch bumble bee within the 1,026-acre campus or the Tier 1(a) Conservation lands to the east of the Project site, the campus is within the historical range for this species, and any crevices or openings within the annual grassland areas on the Project site could provide potentially suitable underground nesting habitat for this species. Should Crotch bumble bee colonies or overwintering queens be present in underground nests on the Project site, construction activities could adversely affect this species and its habitat. With the implementation of **2020 LRDP Mitigation Measure BIO-4**, which is set forth below in **Section 5.6.3**, any potential impacts on Crotch bumble bee would be reduced to **less than significant**. No additional analysis is required in the Project EIR.

San Joaquin Kit Fox. As described in the 2020 LRDP SEIR, there is low potential for San Joaquin kit foxes (*Vulpes macrotis mutica*) to occur on the Project site because the species has not been observed on or near the campus since its establishment, including on the adjacent approximately 6,500-acre Tier 1(a) Conservation Lands where camera monitoring has been conducted annually since 2015. The most recent documented occurrence in the Project vicinity is from 1999, approximately 2.5 miles southeast of the Project site. Regardless, there is some potential for kit foxes to disperse through the Project site, and a potential for physical harm to a kit fox, should one be present within a construction site. Both the 2002 BO and the 2009 BO issued to UC Merced by the USFWS and the ITP issued by CDFW contain extensive requirements, including pre-construction surveys and compliance measures, that UC Merced must implement during construction of projects, including the proposed Project, to avoid harm to kit fox. Compliance with the BO and ITP requirements would adequately avoid and minimize harm to kit fox. Furthermore, as reflected in Section 4.2 of the 2020 LRDP SEIR, UC Merced has already compensated for the loss of residence and dispersal habitat for kit fox through the preservation of more than 25,918 acres of suitable habitat. Thus, potential impacts on kit fox related to injury

¹⁹ On November 13, 2020, the Sacramento County Superior Court issued a ruling in *Almond Alliance v. California Fish and Game Commission*, deeming the State of California lacks authority to list four threatened bumble bee species as endangered under CESA, including the Crotch bumble bee. In February 2021, the Commission filed a Notice of Appeal through the California Attorney General's Office and, as of the date of this Initial Study, the Commission has not yet rescinded the June 2019 decision to accept the petition to list the four species of bumble bees.

or mortality due to construction activities and loss of residence and dispersal habitat would be **less than significant**. No additional analysis is required in the Project EIR.

- b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

The Project area does not contain riparian habitat or other sensitive natural communities as a result of previous grading and development activities associated with the 2020 Project. The Project site consists of California annual grassland and developed and landscaped areas. Existing riparian vegetation along the Fairfield Canal is located outside of the Project area and would be avoided. Therefore, the Project would have **no impact** on riparian habitat or other sensitive natural communities, and no additional analysis is required in the Project EIR.

- c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

There are no State or federally protected wetlands or other waters of the State or U.S. located within the Project site. The Project area was previously graded as part of previous campus development activities. As described in Section 4.2 of the 2020 LRDP SEIR, the impacts of campus development on State and federally protected wetlands were fully evaluated in the 2009 LRDP EIS/EIR, and all previously graded wetlands have been fully mitigated consistent with UC Merced's existing permit requirements. Therefore, the Project would have **no impact** on State or federally protected wetlands, and no additional analysis is required in the Project EIR.

- d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

The Project is located within the portion of the campus designated for future development as part of the 2020 LRDP, and impacts on wildlife movement resulting from campus buildout were fully evaluated in the 2009 LRDP EIS/EIR and incorporated into the 2020 LRDP SEIR by reference. The Project area is located adjacent to existing campus development to the north, west, and south. Cottonwood Loop Road and the Fairfield Canal are located immediately east of the site and limit wildlife movement into the Project area from adjacent undeveloped areas. The proposed Project would not result in a new or more severe impact on wildlife movement than previously analyzed and disclosed in the 2009 LRDP EIS/EIR and 2020 LRDP SEIR, and any local wildlife movement adapted to human disturbance will resume once Project construction is complete. There are no wildlife nursery sites within or adjacent to the Project area. Therefore, the Project would have **no impact** related to wildlife movement or nursery sites, and no further evaluation in the Project EIR is required.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The proposed Project would not conflict with any local policies or ordinances protecting biological resources, as the Project site is State-owned and therefore not subject to local regulations. Therefore, the Project would have **no impact** related to this criterion, and no further evaluation in the Project EIR is required.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No adopted habitat conservation plan or natural community conservation plan applies to the Project site or its vicinity. There would be **no impact** with respect to this criterion and no further evaluation in the Project EIR is required.

5.6.2 Cumulative Impacts

As discussed above, the Project would not impact riparian habitat, other sensitive communities, or State or federally protected wetlands; conflict with any local policies or ordinances protecting biological resources or with an adopted habitat conservation plan or natural community conservation plan; nor would it result in impacts on wildlife movement. As a result, the proposed Project would not contribute to cumulative impacts related to these impact topics.

As discussed in the 2020 LRDP SEIR, development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would not result in the loss or adverse modification of important special-status plant and wildlife habitat, including adverse effects to special-status plant and wildlife species that occupy or could potentially occupy these habitats. UC Merced has proceeded with the conservation of substantial acreages of habitat (nearly 24,000 acres) for special-status species. UC Merced also implements and would continue to implement the avoidance measures and requirements set forth in the BO and the ITP to avoid and minimize impacts on listed species. UC Merced has been and would continue to implement **2020 LRDP Mitigation Measure BIO-9a** to minimize impacts on nesting birds and would implement **2020 LRDP Mitigation Measure BIO-9b** to minimize bird mortality and injury.

As discussed above, the impacts of the proposed Project on special-status species are adequately analyzed in the 2009 LRDP EIS/EIR and 2020 LRDP SEIR, and the Project would not result in new or more severe impacts on biological resources. Therefore, the cumulative impacts of the Project are also fully analyzed in the 2009 LRDP EIS/EIR and 2020 LRDP SEIR. There are no changes in circumstances since the 2009 and the 2020 analyses that would change the less-than-significant impact conclusion of the prior cumulative analysis. Further evaluation of cumulative biological resources impacts in the Project EIR is not required.

5.6.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures that were adopted at the time of the approval of the 2009 LRDP and/or the 2020 LRDP would apply to the proposed Project:

2020 LRDP MM BIO-4: Prior to any new development on previously undisturbed land, and as long as the species is considered a candidate endangered species or in the event that it becomes listed under the California Endangered Species Act, a qualified wildlife biologist shall conduct visual surveys of the development area during the flight season for the Crotch bumble bee (late February through late October). The following methodology shall apply unless the California Department of Fish and Wildlife (CDFW) releases species-specific survey protocol; in this case, CDFW's survey protocol shall apply.

Between two and four evenly spaced presence/absence surveys shall be conducted for the highest detection probability, which, at present time, is the greatest between early spring (late March/early April) and early summer (late June/July). Surveys shall take place when temperatures are above 60°F, preferably on sunny days with low wind speeds (e.g., less than 8 miles per hour) and at least 2 hours after sunrise and 3 hours before sunset. On warm days (e.g., over 85°F), bumble bees will be more active in the mornings and evenings. Surveyors shall conduct transect surveys focusing on detection of foraging bumble bees and underground nests using visual aids such as butterfly binoculars. Even if no Crotch bumble bees are observed, a pre-construction survey shall be conducted within 30 days prior to start of construction. If no Crotch bumble bees or potential Crotch bumble bees are detected during the presence/absence surveys and the pre-construction survey, no further mitigation is required.

If Crotch bumble bees or potential Crotch bumble bees are observed within the development area, a plan to protect Crotch bumble bee nests and individuals shall be developed and implemented in consultation with CDFW. The plan shall include, but not be limited to, the following measures:

- Specifications for construction timing and sequencing requirements (e.g., avoidance of raking, mowing, tilling, or other ground disturbance until late March to protect overwintering queens);
- Preconstruction surveys conducted within 30 days and consistent with any current available CDFW standards prior to the state of ground disturbing activities to identify active nests;
- Establishment of appropriate no-disturbance buffers for nest sites and construction monitoring by a qualified biologist to ensure compliance;
- Restrictions associated with construction practices, equipment, or materials that may harm bumble bees (e.g., avoidance of pesticides/herbicides, BMPs to minimize the spread of invasive plant species);

- Provisions to avoid Crotch bumble bees or potential Crotch bumble bees if observed away from a nest during project activity (e.g., ceasing of project activities until the animal has left the work area on its own volition); and
- Prescription of an appropriate restoration seed mix targeted for the Crotch bumble bee, including native plant species known to be visited by native bumble bee species and containing a mix of flowering plant species with continual floral availability through the entire active season of the Crotch bumble bee (March to October).

2020 LRDP MM BIO-9a: Avoid and minimize impacts on native birds protected under the MBTA, including listed species, fully protected species, special-status species of concern, and raptors and passerines.

- Limit ground disturbance activities to the non-breeding season and remove potential unoccupied breeding habitat during the non-breeding season if possible. If breeding season work is required, conduct take avoidance (tree, shrub, and ground) test surveys to identify and avoid active nests.
 - If feasible, UC Merced shall conduct all project-related activities including (but not limited to) tree and shrub removal, other vegetation clearing, grading, or other ground disturbing activities during the non-breeding season (typically between September 16 and February 14).
 - If activities are scheduled to occur during the breeding season (typically between February 15 through September 15), applicable CDFW and/or USFWS permit conditions in the permits issued to the University related to bird surveys must be followed. In addition, a UC Merced approved qualified avian biologist, with knowledge of the species to be surveyed, shall conduct focused nesting surveys within 15 days prior to the start of project or ground-disturbing activities and within the appropriate habitat. The qualified avian biologist shall determine the exact survey duration and location (typically 500 feet around the work area) based on the work conditions and shall take into account existing applicable CDFW or USFWS permit conditions.
 - If an unoccupied nest (without birds or eggs) of a non-listed of fully protected species (as determined by the qualified avian biologist) is found, the nest shall be removed under the direction of the qualified avian biologist.
 - If an active nest is located, a qualified avian biologist shall establish an appropriate no-disturbance buffer around the nest making sure that any buffer width required by the University's permit obligations is followed. A 500-foot buffer is recommended for listed or fully protected nesting birds (or another buffer determined in consultation with CDFW and/or USFWS), a 250-foot buffer around raptors, and a 75-foot buffer around passerines. If

work activities cause or contribute to a bird being flushed from a nest, the buffer width shall be adjusted to avoid and minimize impacts to nesting birds.

- A qualified avian biologist shall monitor the nest site regularly during work activities to ensure that the nest site is not disturbed, the buffer is maintained and the success or failure of the nest is documented.
- If UC Merced elects to remove a nest tree, nest trees may only be removed after the qualified avian biologist has determined that the nests are unoccupied.
- If an active nest is causing a safety hazard, CDFW shall be contacted to determine if the nest can be removed.
- Minimize impacts to burrowing owl and compensate for habitat loss. CDFW (2012) recommends that take avoidance (preconstruction) surveys be conducted to locate active burrowing owl burrows in the construction work area and within an approximately 500-foot buffer zone around the construction area. A qualified avian biologist shall conduct take avoidance surveys for active burrows according to the CDFW's Staff Report on Burrowing Owl Mitigation (2012 Staff Report). Surveys shall be conducted no less than 14 days prior to initiating ground disturbance activities and surveillance surveys should be conducted as frequently as recommended in the 2012 Staff Report. If ground-disturbing activities are delayed or suspended for than 30 days after the take avoidance survey, the area shall be resurveyed. If no burrowing owls are detected, no further mitigation is required. If the active burrowing owls are detected, the following additional measures are required:
 - Project implementation shall seasonally and spatially avoid negative impacts and disturbances that could result in the take of burrowing owls, nest or eggs.
 - If burrowing owls and their habitat can be protected in place or adjacent to a construction site, buffer zones, visual screens or other measures shall be used to minimize disturbance impacts while project activities are occurring. To use these minimization measures, a qualified avian biologist shall determine the exact measures following the guidance described in the 2012 Staff Report.
 - If owls must be moved away from the project site during the nonbreeding season, passive relocation techniques (e.g., installing one-way doors at burrow entrances) shall be used instead of trapping, as described in CDFW guidelines. At least 1 week will be necessary to complete passive relocation and allow owls to acclimate to alternate burrows.

- When destruction of occupied burrows is unavoidable during the nonbreeding season (September 1 to January 31), unsuitable burrows shall be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on protected lands approved by the CDFW. Newly created burrows shall follow guidelines established by the CDFW.

2020 LRDP MM BIO-9b: Structures proposed under the 2020 LRDP shall incorporate bird-safe design practices (e.g., American Bird Conservancy’s Bird-Friendly Building Design [2015] or San Francisco Planning Department’s Standards for Bird-Safe Buildings [2011]) to minimize the potential for bird-window collisions. Design elements, including but not limited to the following, shall be considered:

- Create building facades with “visual noise” via cladding or other design features that make it easier for birds to identify buildings and not mistake windows for open sky or trees.
- Incorporate windows that are not clear or reflective into the building or structure designs.
- Use windows that incorporate glass types such as UV-A or fritted glass and windows that incorporate UV-absorbing and UV-reflecting stripe.
- Use grid patterns on windows in locations with the highest potential for bird-window collisions (e.g., windows at the anticipated height of adjacent vegetation at maturity).
- Reduce the proportion of glass to other building materials in new construction.
- Avoid placement of bird-friendly attractants (i.e., vegetated roofs, water features, tall trees) near glass whenever possible.
- Install motion-sensitive lighting in any area visible from the exterior that automatically turn lights off during after-work hours.

Prior to all individual project approvals, the UC Merced Physical and Environmental Planning Department shall review the final designs of the buildings and structures to ensure that appropriate bird safety designs have been effectively incorporated to reduce potential impacts to birds.

5.6.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

As the proposed Project would not result in any new or more severe impacts to biological resources than the impacts that were previously analyzed and disclosed in the 2020 LRDP SEIR, no Project-specific mitigation measures are required.

5.7 CULTURAL RESOURCES

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.7.1 Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

The previous cultural resources investigations conducted for the 2009 LRDP EIS/EIR, as referenced in the 2020 LRDP SEIR, identified nine historic resources within the boundary of the UC Merced campus and the University Community North. These resources were formally evaluated and recommended as not eligible for listing in either the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR), and the State Historic Preservation Officer concurred with the finding. The proposed Project site within the UC Merced campus has been disturbed by previous grading and other construction activities (e.g., between 2016 and 2020 as part of the 2020 Project, which coincided with the proposed Project area), and no historical resources have been discovered on the site to date. However, given the time that has passed since a cultural resources study was conducted within the Project area, cultural resources staff retained by UC Merced conducted a field survey of the Project area on March 13, 2021 to identify the presence or absence of surficial historical resources. A records search (IC File No. 116481) for the Project area and a 0.5-mile radius was also conducted on February 3, 2021 at the Central California Information Center (CCalC) to identify previously recorded cultural resources and cultural resources studies that have been submitted to the CCalC since the 2009 LRDP records search was conducted. Based on the results of the field survey and records search,²⁰ no historical resources were located on the Project site pursuant to CEQA Guidelines Section 15064.5. In the event that historical resources are discovered during Project construction activities, the proposed Project would be required to implement **2020 LRDP Mitigation Measure CUL-2** identified below in **Section 5.7.3**.

With the implementation of **2020 LRDP Mitigation Measure CUL-2**, the proposed Project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5. Impacts would be **less than significant**, and no additional analysis is required in the Project EIR.

²⁰ LSA. 2021. Cultural Resources Study for the UC Merced HBS-ME Building Development Project. Prepared for the University of California, Merced.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Impacts on archaeological resources from the development of the UC Merced campus were evaluated in the 2009 LRDP EIS/EIR, as referenced in the 2020 LRDP SEIR. Some areas of the campus evaluated were determined to have prehistoric sites that were previously recorded. The analysis concluded that the impacts on archaeological resources from campus development would be reduced to a less-than-significant level with the implementation of **2020 LRDP Mitigation Measure CUL-2** identified below.

The Project site and location of proposed improvements are not in an area of the campus where prehistoric sites were previously recorded. As described above, the proposed Project site within the UC Merced campus has been disturbed by previous construction activities, and no archaeological resources have been discovered on the site to date. On March 13, 2021, a field survey was conducted by an archaeologist to identify the potential presence or absence of surficial archaeological resources. To prepare for the field survey, the archaeologist reviewed historic-period maps to assess sensitivity for historical archaeological resources. The map review revealed a building had been constructed by 1914 within the Project area. During the field survey, no structural remains, artifacts, or soil inconsistencies were observed at the mapped location of this building that would indicate the presence of a historical resource.

The field survey and records search (referenced in **Section 5.7.1.a** above) yielded no evidence of archaeological resources in the Project site pursuant to CEQA Guidelines Section 15064.5. The historic-period map review did reveal a single building located in the Project area by 1914; however, no surficial evidence of the building was noted during the field survey. It is unknown if buried archaeological resources associated with the building are present in the Project area. In the event that archaeological resources are discovered during Project construction activities, the proposed Project would be required to implement **2020 LRDP Mitigation Measure CUL-2** identified below.

With implementation of **2020 LRDP Mitigation Measure CUL-2**, the proposed Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5. Impacts would be **less than significant**, and no additional analysis is required in the Project EIR.

c. Would the project disturb any humans remains, including those interred outside of formal cemeteries?

Impacts on human remains from the development of the UC Merced campus were evaluated in the 2009 LRDP EIS/EIR, as referenced in the 2020 LRDP SEIR. None of the areas of the campus (including the location of the proposed Project) evaluated under the 2020 LRDP SEIR were determined to have previously discovered human remains. The analysis concluded that the impacts from campus development on human remains (if discovered) would be reduced to a less-than-significant level with the implementation of **2020 LRDP Mitigation Measure CUL-3** identified below.

The proposed Project site within the UC Merced campus has been disturbed by previous construction activities, and no evidence of human remains have been discovered on the site,

including during the survey conducted on March 13, 2021. In the event that human remains are discovered during Project construction activities, the proposed Project would be required to implement **2020 LRDP Mitigation Measure CUL-3** identified below.

With the implementation of **2020 LRDP Mitigation Measure CUL-3**, the proposed Project would incorporate procedures to appropriately collect and preserve human remains if encountered during construction activities. Impacts would be **less than significant**, and no additional analysis is required in the Project EIR.

5.7.2 Cumulative Impacts

Based on the analysis in the 2009 LRDP EIS/EIR, the 2020 LRDP SEIR found that past and future losses of cultural resources due to land development in eastern Merced County would result in a significant cumulative impact on cultural resources. However, the contribution of the campus development under the LRDP to the loss of cultural resources in eastern Merced County would not be cumulatively considerable due to the implementation of adequate mitigation (see **2020 LRDP Mitigation Measure CUL-2** and **2020 LRDP Mitigation Measure CUL-3** below). There have been no changes in circumstances or new information since the certification of the 2020 SEIR that would alter the conclusions of the previous analysis. The proposed Project is within the area and scope of the previous analysis and would also implement these mitigation measures to avoid significant impacts on cultural resources. The cumulative cultural resources impacts associated with the proposed Project are adequately addressed in the 2020 LRDP SEIR. Further analysis in the Project EIR is not required.

5.7.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures that were adopted in conjunction with the approval of the 2009 LRDP and/or the 2020 LRDP would apply to the proposed Project:

2020 LRDP MM CUL-2: If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or non-human bone are inadvertently discovered during ground disturbing activities on the campus, work will stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures typically include development of avoidance strategies or mitigation of impacts through data recovery programs such as excavation or detailed documentation. If cultural resources are discovered during construction activities, the construction contractor and lead contractor compliance inspector will verify that work is halted until appropriate treatment measures are implemented in coordination with the USACE and UC Merced.

2020 LRDP MM CUL-3: If human remains of Native American origin are discovered during ground disturbing activities, the Campus and/or developer will comply with state laws relating to the disposition of Native American burials, which falls within the jurisdiction of the California Native American Heritage Commission (Public Resources Code Section 5097). If human remains are discovered or recognized in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the coroner of Merced

County has been informed and has determined that no investigation of the cause of death is required; and if the remains are of Native American origin; the descendants from the deceased Native American have made a recommendation to the land owner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and associated grave goods as provided in Public Resources Code Section 5097.98; or the California Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the Commission.

2020 LRDP MM CUL-4a: Prior to project construction, construction personnel will be informed of the potential for encountering significant paleontological resources. All construction personnel will be informed of the need to stop work in the vicinity of a potential discovery until a qualified paleontologist has been provided the opportunity to assess the significance of the find and implement appropriate measures to protect or scientifically remove the find. Construction personnel will also be informed of the requirements that unauthorized collection resources are prohibited.

5.7.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

As the Project would not result in any new or more severe impacts to cultural resources than the impacts that were previously analyzed and disclosed in the 2020 LRDP SEIR, no Project-specific mitigation measures are required.

5.8 ENERGY

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.8.1 Impact Analysis

- a. *Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?*
- b. *Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

The 2020 LRDP SEIR concluded that campus development occurring under the 2020 LRDP would result in a less-than-significant impact related to the potential wasteful, inefficient or unnecessary consumption of energy resources during campus construction and operation, and that campus development would not conflict with a State or local plan for renewable energy or energy efficiency.

Construction. As described in Section 4.11 of the 2020 LRDP SEIR, campus development under the 2020 LRDP would require site preparation, grading, pavement and asphalt installation, building construction, architectural coating, and landscaping and hardscaping. No demolition would be required. All construction would be typical for the region and building type. The total consumption of gasoline and diesel fuel during construction activities under the 2020 LRDP was estimated using CalEEMod based on UC Merced constructing an additional 1.83 million gsf of building space between 2020 and 2030 within a 103-acre portion of the campus that includes the proposed Project site. As reflected in the 2020 LRDP SEIR, off-road construction equipment, vendor trips, and hauling trips would consume approximately 0.63 million gallons of diesel over the entire 2020 LRDP construction period. Worker trips would consume about 1.9 million gallons of gasoline over the 2020 LRDP construction period. These amounts would be consumed over a period of 10 years and would represent a small percentage of the total energy used in the State.

As described in **Section 2.4** of this Initial Study, the proposed Project would account for an additional approximately 182,698 gsf of building space on the campus, which is well within the 1.83 million gsf increase evaluated in the 2020 LRDP SEIR. Furthermore, the construction of the proposed building would comply with CALGreen, which would also result in the use of sustainable materials and recycled content during construction and the sourcing of products from nearby sources to the extent feasible. The Project would also be required to comply with the California Air Resources Board's (CARB) adopted Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other TACs. Finally, the proposed Project would be designed to comply with the University of California Sustainable

Practices Policy (Sustainability Policy), which contains policies for green building design, clean energy, climate protection, and zero waste. As such, Project construction would not increase the consumption of energy resources beyond what was evaluated in the 2020 LRDP SEIR. This impact would be **less than significant**, and no further evaluation in the Project EIR is required.

Operation. As described in the 2020 LRDP SEIR, campus operation under the 2020 LRDP would result in a net new demand of approximately 211 therms of natural gas per year and a net new electricity demand of 7.8 megawatts per year (MW/yr). Title 24 represents the State policy on building energy efficiency. The goals of the Title 24 standards are to improve energy efficiency of residential and non-residential buildings, minimize impacts during peak energy-usage periods, and reduce impacts on State energy needs. The Sustainability Policy requires buildings to exceed Title 24 by 20 percent or meet energy performance targets. At UC Merced, a more ambitious goal of outperforming Title 24 energy efficiency standards by 30 percent has been set. Current campus buildings, which employ an array of design and technological strategies to minimize and manage campus energy consumption, are using approximately 50 percent less energy than Title 24 standards. The proposed Project would comply with the Sustainability Policy and the Campus's sustainable practice design guidelines. Project sustainability targets and goals include LEED minimum building certification level of Gold under the LEED Green Building Rating System, with incentives for Platinum. The proposed Project would outperform the California Energy Code by 20 percent or better as required by UC's Sustainability Policy or would meet UC's Whole Building Energy Performance Targets.

Additional automobile use under the 2020 LRDP, which accounts for the increase in vehicle use associated with the proposed Project, would result in the consumption of approximately 785,340 gallons of gasoline and 447,340 gallons of diesel related to vehicular travel. As described in **Section 5.10**, Greenhouse Gas (GHG) Emissions of this Initial Study, the 2020 LRDP found that the per capita emissions of GHGs under the 2020 LRDP from all energy use, including the proposed Project, including petroleum-based fuel use, would not exceed the per capita GHG threshold. Although the total emissions from all energy use would exceed the total GHG emissions threshold, GHG emissions would be reduced to a less-than-significant level with the mitigation specified in **Section 5.10.3**. The estimated campus population increase and total building space associated with the proposed Project are within the program-level assumptions for the 2020 LRDP SEIR analyses. Therefore, the Project emissions would remain below the established thresholds and the use of energy by the campus under the 2020 LRDP would not be wasteful or inefficient. Thus, with compliance with Title 24 and consistency with UC's Sustainability Policy, electricity and natural gas (if installed) use associated with the Project would not be inefficient, wasteful, and unnecessary, nor would the increased energy use associated with the Project conflict with a State or local plan for renewable energy or energy efficiency. The impact would be **less than significant**, and no further evaluation in the Project EIR is required.

5.8.2 Cumulative Impacts

The 2020 LRDP SEIR concluded that the implementation of the 2020 LRDP would not contribute substantially to a cumulative impact on energy resources. As described above, the impacts of the proposed Project are adequately analyzed in the 2020 LRDP SEIR, and the Project would not result in new or more severe impacts on energy resources. The proposed Project would account for an

additional approximately 182,698 gsf of building space on the campus, which is well within the 1.83 million gsf increase evaluated in the 2020 LRDP SEIR. The anticipated population increase associated with the proposed HBS-ME Building Project (i.e., 2,999 students, faculty, and staff) is also within the projected campus population increase between 2020 and 2030 that was analyzed in the 2020 LRDP SEIR (i.e., 6,431 students, faculty, and staff). Therefore, the cumulative impacts of the Project are also fully analyzed in the 2020 LRDP SEIR. There are no changes in circumstances since the 2020 analysis that would change the conclusions of the prior cumulative analysis, and further evaluation of cumulative energy impacts in the Project EIR is not required.

5.8.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The 2020 LRDP SEIR did not require mitigation measures under this resource topic as no potentially significant impacts associated with energy resources were identified.

5.8.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

As the Project would not result in any new or more severe impacts related to energy resources or efficiency than the impacts that were previously analyzed and disclosed in the 2020 LRDP SEIR, no Project-specific mitigation measures are required.

5.9 GEOLOGY AND SOILS

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:		
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.9.1 Impact Analysis

- a. *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:*
- i. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*

The UC Merced campus, which includes the Project site, is not located on, adjacent to, or near an Alquist-Priolo Earthquake Fault Zone.²¹ According to the 2020 LRDP SEIR, there are no active faults on or adjacent to UC Merced or the Project site that could result in a significant seismic hazard. The nearest active fault is in the western portion of Merced County, at a distance from the Project site such that seismic activity along that fault would not be expected to cause rupture or other adverse impacts at the Project site. The Foothills fault system is approximately 15 miles northeast of the Project site, but this system is not considered to be active.

As there are no active fault systems that could affect the UC Merced campus, the 2020 LRDP SEIR concluded that construction of campus facilities, such as the proposed Project, would not expose

²¹ United States Geological Survey, Earthquake Hazards Program, Alquist-Priolo Faults, <https://earthquake.usgs.gov/education/geologicmaps/apfaults.php>. Accessed January 18, 2021.

people or structures to a significant level of risk from fault rupture. In addition, the proposed HBS-ME Building would be constructed to comply with the California Building Code. Impacts would be **less than significant** and no additional analysis is required in the Project EIR.

ii. Strong seismic ground shaking?

The region of the State where the Project site is located is characterized by a low level of seismic activity and, as such, the ground-shaking hazard in the area is considered to be low. However, the 2020 LRDP SEIR concluded that the construction of buildings on the campus, such as the proposed HBS-ME Building, could still result in the exposure of people or structures to excessive risk from ground shaking. As such, **2020 LRDP Mitigation Measure GEO-2** (identified below in **Section 5.9.3**) would be implemented as part of the proposed Project. Project impacts would be **less than significant**, and no additional analysis is required in the Project EIR.

iii. Seismic-related ground failure, including liquefaction?

Although liquefaction can occur in the Central Valley, there are no areas on or adjacent to the UC Merced campus or the Project site that are at a significant risk of such seismically induced events. In addition, the UC Merced campus and the Project site are underlain by a hardpan layer of soil within 3 feet of the surface, serving to significantly reduce liquefaction hazards. The 2020 LRDP SEIR concluded that construction of buildings on the campus (such as the proposed Project) could still pose a risk to public safety and property by exposing people, property, and infrastructure to potentially adverse effects including seismic-related ground failure and liquefaction. The proposed Project would implement **2020 LRDP Mitigation Measure GEO-2**, which would reduce potential impacts from liquefaction and seismic-related ground failure. Project impacts would be **less than significant**, and no additional analysis is required in the Project EIR.

iv. Landslides?

The UC Merced campus, which includes the Project site, is located on and surrounded by relatively flat topography. Foothills of the Sierra Nevada Mountain Range are located 9.5 miles to the east of the Project site. The 2020 LRDP SEIR concluded that construction of on-campus buildings, such as the proposed Project, could still be subject to hazards related to seismically-induced landslides or landslide runout. The proposed Project would implement **2020 LRDP Mitigation Measure GEO-2**, which would reduce potential impacts from seismic related landslides. Project impacts would be **less than significant**, and no additional analysis is required in the Project EIR.

b. Would the project result in substantial soil erosion or the loss of topsoil?

The 2020 LRDP SEIR concluded that construction of new buildings on campus, such as the proposed Project, would not result in substantial erosion or the loss of topsoil from grading activities. As the proposed Project would occur on an area greater than 1 acre in size, the proposed Project would be subject to National Pollutant Discharge Elimination System (NPDES) storm water regulations, which include BMPs to reduce soil erosion and loss of topsoil during construction activities. As construction of the proposed Project would be subject to NPDES storm water regulations, implementation of the proposed Project would reduce soil erosion and loss of topsoil from occurring during construction

activities. Impacts would be **less than significant**, and no additional analysis is required in the Project EIR on this resource topic.

- c. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Issues related to seismically induced and non-seismic related landslide hazards are discussed above in **Section 5.9.1.a (iv)**. Issues related to liquefaction and related hazards are discussed above in **Section 5.9.1.a (iii)**. Issues related to soil properties are discussed below in **Section 5.9.1.d. 2020 LRDP Mitigation Measure GEO-2** would be implemented to reduce such geologic impacts from occurring during Project development. Project impacts would be **less than significant**, and no additional analysis is required in the Project EIR on this resource topic.

- d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?*

According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Websoil survey, the Project site is underlain by *Montpellier coarse sandy loam, 3 to 8 percent slopes* (MrB) and *Corning gravelly loam, 0 to 8 percent slopes* (CgB) soil types.²² The soils present on the Project site have a moderate to high shrink-swell potential (i.e., soil expansiveness). This shrinking (when dry) and swelling (when wet) of these soils can result in differential ground movement. If structures, such as the proposed building, are constructed in areas with expansive and/or weak soils, structural damage could occur. As a result, the 2020 LRDP SEIR concluded that expansive soils could cause a risk for post-construction heave and cracking of concrete slabs, as well as lightly loaded foundations and pavements. The proposed Project would implement **2020 LRDP Mitigation Measure GEO-2** to ensure design features are included in construction of the proposed Project to reduce damage associated with potential expansive soils. Project impacts would be **less than significant**, and no additional analysis is required in the Project EIR.

- e. Would the project 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?*

The proposed Project would not include the use of septic tanks or alternative wastewater disposal systems. The proposed Project would connect to the campus wastewater collection system that has been developed as part of the recent UC Merced 2020 Project, which will serve the entire UC Merced campus. **No impact** would occur, and no additional analysis is required in the Project EIR.

²² United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) Websoil Survey. Website: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm> (accessed January 18, 2021).

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impacts on paleontological resources from the development of the UC Merced campus, including the area where the proposed Project would be developed, were evaluated in the 2009 LRDP EIS/EIR, as referenced in the 2020 LRDP SEIR, and were found to be potentially significant. The analysis concluded that the impacts from campus development could be reduced to a less-than-significant level with the implementation of **2020 LRDP Mitigation Measures CUL-4a** and **CUL-4b** in **Section 5.7.3**. The proposed Project site has already been disturbed by extensive grading activities and paleontological resources have not been uncovered. However, during the course of Project construction activities, if paleontological resources are uncovered, the proposed Project would be required to implement **2020 LRDP Mitigation Measures CUL-4a** and **CUL-4b**. These measures would ensure that if any previously undiscovered paleontological resources are found during Project construction, the resources would be collected and properly curated as warranted. It should be noted that the Project site is not occupied by any unique geologic formations.

With implementation of **2020 LRDP Mitigation Measures CUL-4a** and **CUL-4b**, the proposed Project would not directly or indirectly destroy a unique paleontological resource. Impacts would be **less than significant**, and additional analysis in the Project EIR is not required.

5.9.2 Cumulative Impacts

The 2020 LRDP SEIR determined that development on the UC Merced campus would not result in any cumulative impacts related to geology and soils. Impacts to geologic resources are site-specific and are typically not considered as a cumulative impact. As discussed above, the impacts of the proposed Project are adequately analyzed in the 2020 LRDP SEIR, and the Project would not result in new or more severe impacts related to geology and soils. Therefore, the cumulative impacts of the Project are also fully analyzed in the 2020 LRDP SEIR. There are no changes in circumstances since the 2020 analysis that would change the conclusions of the prior cumulative analysis. Further evaluation of cumulative geology and soils impacts in the Project EIR is not required.

The 2020 LRDP SEIR found that past and future loss of paleontological resources due to land development in eastern Merced County would result in a significant cumulative impact. However, the contribution of the campus development under the LRDP to the loss of paleontological resources in eastern Merced County would not be cumulatively considerable due to the implementation of adequate mitigation (see **2020 LRDP Mitigation Measure CUL-4a** and **2020 LRDP Mitigation Measure CUL-4b** in **Section 5.7.3**). As discussed above, the impacts of the proposed Project are adequately analyzed in the 2009 LRDP EIS/EIR and 2020 LRDP SEIR, and the Project would not result in new or more severe impacts on paleontological resources. There are no changes in circumstances or new information that would change the conclusions of the 2009 LRDP EIS/EIR and the 2020 LRDP SEIR regarding cumulative impacts. Further analysis of cumulative paleontological resources impacts in the Project EIR is not required.

5.9.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures that were adopted in conjunction with the approval of the 2009 LRDP and/or the 2020 LRDP would apply to the proposed Project:

2020 LRDP MM GEO-2: During project-specific building design, a site-specific geotechnical investigation shall be performed by a Certified Engineering Geologist or Licensed Geotechnical Engineer to assess detailed seismic, geologic, and soil conditions at each construction site. The study shall include an evaluation of liquefaction potential, slope stability, landslide potential, expansive and compressible soils, and other structural characteristics and shall identify specific geotechnical recommendations designed to mitigate for the site hazards. The geotechnical recommendations will be followed.

5.9.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

As the Project would not result in any new or more severe impacts to geology and soils than the impacts that were previously analyzed and disclosed in the 2020 LRDP SEIR, no Project-specific mitigation measures are required.

5.10 GREENHOUSE GAS EMISSIONS

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.10.1 Impact Analysis

- a. *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

The 2020 LRDP SEIR evaluated the potential impact of GHG emissions associated with implementation of the 2020 LRDP in Section 4.3, Greenhouse Gas Emissions.

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide (CO₂);
- Methane (CH₄);
- Nitrous oxide (N₂O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulfur Hexafluoride (SF₆).

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, believed to be causing global warming. While some of the manmade GHGs such as CO₂, methane, and N₂O also occur naturally, some gases, like HFCs, PFCs, and SF₆ are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation

and length of time that the gas remains in the atmosphere (“atmospheric lifetime”). The GWP of each gas is measured relative to CO₂, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO₂ over a specified time period. GHG emissions are typically measured in terms of pounds or tons of “CO₂ equivalents” (CO₂e).

The proposed Project’s impacts related to the release of GHG emissions for both the construction and operation periods are discussed below.

Construction GHG Emissions

As discussed in the 2020 LRDP SEIR, GHG emissions associated with construction activities would occur throughout the timeframe of the 2020 LRDP from January 2021 to December 2030. Construction activities would include site preparation, grading, building construction, pavement and asphalt installation, landscaping and hardscaping, and architectural coatings. The 2020 LRDP SEIR found that approximately 6,118 metric tons of CO₂e would be emitted during the approximately 10-year construction period, which is about 612 metric tons of CO₂e per year. The 2020 LRDP SEIR found that construction GHG emissions would result in a less-than-significant impact.

The proposed Project would include the development of the 182,698 square foot HBS-ME Building and would result in an increase of 2,811 students and 188 faculty/staff members. The estimated increase in campus population and total building space associated with the proposed Project are within the growth assumptions used in the 2020 LRDP SEIR analyses. As such, construction-phase GHG emissions associated with the proposed Project are accounted for in the estimated annual construction emissions reported above. As with the 2020 LRDP, the proposed Project would not result in a significant construction-related GHG impact. The impact would be **less than significant**.

Operational GHG Emissions

As discussed in the 2020 LRDP SEIR, implementation of the 2020 LRDP would contribute to long-term cumulative increases in GHG emissions as a result of additional buildings and people on the campus. Sources of new emissions would include building heating, cooling and lighting systems, water use, wastewater generation, and solid waste generation, as well as increases in traffic to the campus. The campus does not, and would not as part of the implementation of the 2020 LRDP, emit industrial or agricultural gases. Thus, the campus would generate little in the way of GHGs other than carbon dioxide. While certain research activities on the campus may involve the emission of other GHGs, these activities typically result in minimal GHG emissions.

The 2020 LRDP SEIR evaluated GHG impacts based on emissions reduction goals set forth in Assembly Bill (AB) 32 and Senate Bill (SB) 32. According to AB 32 and SB 32, the State’s 2020 emissions must be reduced to 1990 emissions levels, and by 2030 to be 40 percent below 1990 emissions, respectively. Using UC Merced’s 2005 GHG emissions as baseline, and reduction targets from the State laws, two campus-specific thresholds were developed: the first one involving a total emissions threshold, and the second one involving an efficiency threshold based on per capita emissions. The 2020 LRDP SEIR used a total emissions threshold of 3,300 metric tons of CO₂e per

year and a per capita threshold of 2.44 metric tons of CO₂e per capita per year in 2030, which, if exceeded, would represent a significant impact.

The 2020 LRDP SEIR found that the campus' per capita emissions of 0.63 metric tons of CO₂e per capita per year in 2030 would be well below the UC Merced 2030 per capita target of 2.44 metric tons of CO₂e per capita per year. However, the 2020 LRDP SEIR found that the campus' total emissions of 10,137 metric tons of CO₂e in 2030 would exceed the threshold of 3,300 metric tons of CO₂e per year. As such, the 2020 LRDP SEIR found that implementation of the 2020 LRDP would result in a potentially significant impact. The 2020 LRDP SEIR identified **2020 LRDP Mitigation Measures GHG-1a, GHG-1b, and GHG-1c** to reduce this impact to a less-than-significant level.

The proposed Project would include the development of the approximately 182,698-square-foot HBS-ME Building and would result in an increase of 2,811 students and 188 faculty/staff members. The estimated increase in campus population and total building space associated with the proposed Project are within the growth assumptions used in the 2020 LRDP SEIR analyses; therefore, the operational emissions that would result due to the proposed Project are included in the estimated emissions reported and used in the SEIR to determine the LRDP's GHG impact. Finally, UC Merced would continue to implement **2020 LRDP Mitigation Measures GHG-1a, GHG-1b, and GHG-1c** to ensure operational emissions from campus development under the 2020 LRDP remain below the thresholds and the impact remains less than significant. Therefore, operational GHG impact of the proposed Project would be **less than significant** and further evaluation in the Project EIR is not required.

b. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As discussed in the 2020 LRDP SEIR, AB 32 (the Global Warming Solutions Act of 2006) established the goal for the reduction of California's GHG emissions to 1990 levels by 2020. In 2015 and 2016, SB 350 (Clean Energy and Pollution Reduction Act) and SB 32 (California Global Warming Solutions Act of 2006) were signed into law, establishing the State's mid-term target for 2030 emissions to be 40 percent below the 1990 emissions. As discussed in **Section 5.10.1.a** above, with the implementation of the 2020 LRDP, on a per capita basis, the campus would emit 0.63 metric tons per capita in 2030, which is below the campus-specific threshold of 2.44 metric tons per capita per year derived for the campus for compliance with SB 32. Furthermore, UC Merced would implement **2020 LRDP Mitigation Measures GHG-1a, GHG-1b, and GHG-1c** to reduce its total emissions such that they remain below 3,300 metric tons of CO₂e per year, a target emissions level that is 40 percent less than the campus' 2020 emissions target. Therefore, with mitigation, campus development under the 2020 LRDP would not conflict with the State laws and regulations related to GHG emissions.

In addition, as discussed in the 2020 LRDP SEIR, the 2020 LRDP is a projected development program for the Merced campus for the years 2020 through 2030. Under the plan, the campus is anticipated to add about 1.83 million square feet of building space by 2030. The campus population is projected to increase by 5,300 persons to a total of about 17,400 persons by 2030. The addition of building space would increase the use of energy on the campus and the additional population would result in more persons commuting to the campus. Increased on-campus population would also increase water use, wastewater generation and solid waste generation. All of these changes would have the

potential to increase the campus' GHG emissions. However, as under existing conditions, campus development under the 2020 LRDP would continue to be completed in a manner that it is compliant with the UC Sustainability Policy, UC Merced Sustainability Strategic Plan, and the UC Merced CAP. Campus projects under the 2020 LRDP, such as the proposed Project, would achieve a minimum of a Silver rating under the LEED Green Building Rating System. UC Merced would continue to develop on-site renewable energy sources, procure clean energy, and obtain offsets as necessary, in compliance with **2020 LRDP Mitigation Measure GHG-1a**. The Campus would also continue to implement and expand transportation demand management (TDM) programs to minimize the increase in commuting and other emissions in compliance with **2020 LRDP Mitigation Measures AQ-2a** and **-2b** in **Section 5.5.3**, and evaluate and implement new technologies that reduce emissions, pursuant to **2020 LRDP Mitigation Measure GHG-1c**. Therefore, with mitigation, implementation of the 2020 LRDP would not conflict with the UC Sustainability Policy or the UC Merced plans adopted to reduce GHG emissions.

The proposed Project would include the development of the 182,698 square foot HBS-ME Building and would result in an increase of 2,811 students and 188 faculty/staff members. The estimated increase in campus population and total building space associated with the proposed Project are within the growth assumptions used in the 2020 LRDP SEIR analyses. Further, UC Merced would continue to implement **2020 LRDP Mitigation Measures GHG-1a, GHG-1b, and GHG-1c** to ensure operational emissions from campus development under the 2020 LRDP remain less than significant. Therefore, the proposed Project would not conflict with applicable plan, policy, or regulations pertaining to GHGs. The proposed Project would result in a **less-than-significant** impact and further evaluation in the Project EIR is not required.

5.10.2 Cumulative Impacts

As discussed in the 2020 LRDP SEIR, the impact from a project's GHG emissions is essentially a cumulative impact, and the methodologies and standards applied in the SEIR analysis are designed to assess the cumulative significance of GHG emissions under the 2020 LRDP. Based on the analysis summarized above, the operational GHG emissions from campus development under the 2020 LRDP would result in a potentially significant cumulative impact. However, with implementation of **2020 LRDP Mitigation Measures GHG-1a, GHG-1b, and GHG-1c**, the significant cumulative impact would be reduced to a less-than-significant level. There are no changes in circumstances or new information that would alter the conclusions of the 2020 LRDP EIR analysis. The proposed Project is within the scope of the prior analysis, and therefore the Project's cumulative impact is adequately analyzed in the 2020 LRDP SEIR. As with the 2020 LRDP, the cumulative impact of the proposed Project would also be **less than significant** with mitigation. Further evaluation of cumulative GHG emissions impacts in the Project EIR is not required.

5.10.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures that were adopted in conjunction with the approval of the 2020 LRDP would apply to the proposed Project:

2020 LRDP MM GHG-1a: UC Merced shall set a goal to reduce or control the increase in its GHG emissions such that the total emissions do not exceed 3,300 MT CO_{2e}/year by the end of the year 2030. UC Merced shall monitor GHG emissions each year, monitor upcoming

projects for their potential to increase the campus' GHG emissions, and implement project-specific and campus-wide GHG reduction measures to reduce the campus' GHG emissions in accordance with the 3,300 MT CO_{2e}/year goal for 2030. In the event that adequate reduction is not achieved by these measures, UC Merced shall purchase renewable energy credits, or other verifiable GHG offsets to keep the net emissions at or below 3,300 MT CO_{2e}/year.

2020 LRDP MM GHG-1b: UC Merced shall implement LRDP Mitigation Measures AQ-2a and -2b.

2020 LRDP MM GHG-1c: UC Merced shall periodically review new technologies that can be implemented to further reduce the campus' GHG emissions.

Cumulative MM C-GHG-1: Implement 2020 LRDP Mitigation Measures GHG-1a, 1b, and 1c.

5.10.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

There would be no impacts or a less-than-significant impact pertaining to GHG emissions with implementation of the proposed Project. As such, no Project specific mitigation measures are required to reduce impacts to pertaining to GHG emissions.

5.11 HAZARDS AND HAZARDOUS MATERIALS

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.11.1 Impact Analysis

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Routine transport, use, and disposal of hazardous materials would be associated with the construction and operation of the proposed academic building, similar to other existing academic buildings and new facilities developed on the UC Merced campus under the 2020 LRDP. Similar to existing conditions, hazardous materials in the form of fuels, paints, etc., would be used during Project construction; once the proposed HBS-ME Building is constructed, some hazardous materials use would be associated with the operation of the building.

The 2020 LRDP provides for the development of uses on the UC Merced campus such as research and instructional laboratories, central plant, vehicle maintenance facilities, and other facilities that would involve the transport, use, or dispose of hazardous materials. The operation of the proposed Project could include the use of various chemicals, biohazards, radioactive materials, and animal testing procedures and waste that may pose different levels of hazards with their uses, as described below.

Biohazards

As a scientific research facility, UC Merced cannot predict every possible biological agent or research application it might conceivably use in the future within the proposed HBS-ME Building. However, it is expected that small quantities of various biologically hazardous substances would be used for research in the proposed building. UC Merced currently adheres to and would continue to adhere to

the US Department of Health and Human Services guidelines, *Biosafety in Microbiological and Biomedical Laboratories*, put forth by the National Institutes of Health and the Centers of Disease Control, which specifies best practices for the safe conduct of work in biomedical and clinical laboratories. Thus, as discussed in the Initial Study prepared as part of the 2020 LRDP SEIR, the 2020 LRDP's compliance with the guidelines would reduce this impact to a less-than-significant level. As development of the proposed Project would use similar amounts of biologically hazardous substance and adhere to the same guidelines as other development under the 2020 LRDP, it would not result in a new or more severe impact related to biohazardous materials. The impact would be **less than significant** and no further analysis is required in the Project EIR.

Radioactive Waste

Some radioactive substances may be used on the UC Merced campus, including in the proposed HBS-ME Building, for research purposes. The potential human health effects from radiation exposure range from no known health effects to minor skin irritations or headaches to cancerous tumors. Radiation could pose a health risk to those who are exposed, but exposure can be prevented with proper protective equipment and procedures. The Radiological Safety Division of the Department of Environmental Health and Safety (EH&S) at UC Merced is responsible for the development and oversight of a comprehensive radiation safety program. The radiation safety program ensures the safe handling, transport, use, and disposal of radiological materials, lasers, and x-ray machines. Compliance with the radiation safety program would require the necessary protective measures to avoid exposing visitors, students, faculty, staff, and the community to any radioactive materials. Furthermore, radioactive materials would be monitored closely by the EH&S. For example, before obtaining radioactive materials, each principal investigator would require a Radiation Use Authorization from the Radiation Safety Officer, which would specify the particular radioisotopes to be used and maximum quantities to be possessed. According to the 2020 LRDP SEIR, the Campus's compliance with regulations for radiation safety would reduce this impact to a less-than-significant level. As development of the proposed Project would use similar amounts of radioactive substances and adhere to the same regulations, it would not result in a new or more severe impact related to use of radioactive substances. The impact would be **less than significant** and no further analysis is required in the Project EIR.

Animal Research

The use of animals in UC Merced research laboratories could pose potential hazards to workers, students, and the neighboring community if contact between humans and animals is not properly managed. An infected animal can spread disease and present a physical safety hazard through bites and scratches. Exposure to infectious agents can occur through animal bites or by infectious agents being spread to the neighboring community, which can occur if animals escape or if infectious agents are transmitted by vectors. Vectors are organisms that carry diseases from infected animals to others in the community (for example, a mosquito could carry malaria from an infected person to an uninfected person). The possible health effects would depend on the species housed in campus facilities and the types of research pursued.

Before any research involving live vertebrate animals can be initiated on a UC campus (or in the proposed HBS-ME Building), an animal care and use protocol for the activity must be prepared by the principal investigator and approved by the Campus Animal Care and Use Committee. Research

involving hazardous agents also goes through a safety committee approval process that addresses safety and waste management practices. Approved protocols must comply with federal and State requirements as well as the Institutional Animal Care and Use Committee (IACUC). Vertebrate animals cannot be obtained for research until experimental protocols are approved. Animal housing facilities must also conform to the National Institutes of Health guidelines and the Animal Welfare Act. Rats and mice are not currently regulated under the Act, but they are covered by the IACUC. According to the 2020 LRDP SEIR, the Campus' compliance with animal care and use guidelines would reduce this impact to a less-than-significant level. As development of the proposed Project would also involve similar research and adhere to the same requirements currently in place, it would not result in a new or more severe impact related to hazards associated with the use of animals in campus research. Impacts would be **less than significant** and no further analysis is required in the Project EIR.

Hazardous Materials Handling

UC Merced policies and procedures would address the procurement, handling, and disposal of carcinogenic, controlled, volatile, flammable, and explosive substances within the proposed HBS-ME Building. The Campus EH&S department provides compliance support to research principal investigators and assists in implementing measures designed to ensure compliance with applicable environmental, health and safety laws and regulations. Students, researchers, and staff within the proposed HBS-ME Building would be required to follow hazard control hierarchy including following standard engineering and administrative controls (e.g., working with potential inhalation hazards under fume hoods) to minimize the risk of potential exposure to human health and the environment.

The use of engineering controls would help to minimize indoor laboratory air toxic concentrations in order to meet compliance obligations for exposure limits to personnel pursuant to the California Division of Occupational Safety and Health (Cal/OSHA). To prevent exposure through skin contact, Campus policies and procedures require that research personnel minimize the potential for dermal contact and wear personal protective equipment (e.g., laboratory coats, gloves, and safety glasses or goggles) while handling hazardous materials and wastes within all campus facilities, including the proposed HBS-ME Building. Personal hygiene practices, including washing after handling chemicals, would also be required in all laboratories within the proposed building. In addition, eating, drinking, applying cosmetics, and chewing gum or tobacco would not be permitted in HBS-ME Building laboratories using hazardous, radioactive, carcinogenic, or biohazardous chemicals or materials in accordance with the UC Merced Laboratory Safety Plan.

The use of hazardous chemicals in varying amounts during construction of the proposed building is also subject to hazard control. Construction and maintenance activities would use hazardous chemicals, such as solvents and cleaners, fuels (gasoline and diesel) for portable generators, oils and lubricants, paints and paint thinners, adhesives, cleaning and coating agents (e.g., solvents and corrosives) in addition to soaps and detergents, and potentially the application of pesticides and herbicides. Building construction activities are required to comply with all applicable environmental, health and safety compliance regulations including, but not limited to, Titles 8 and 22 of the California Code of Regulations, Uniform Fire Code, and Division 20 of the California Health and Safety Code.

The transport and unloading of hazardous materials to and from the proposed Project site during construction activities would comply with United States Department of Transportation (DOT) and California Department of Transportation (Caltrans) regulations. According to the 2020 LRDP SEIR, the Campus' compliance with all state, federal, and local hazardous materials regulations would reduce any construction, operational, and maintenance-related hazardous materials impacts to a less-than-significant level. Impacts would be **less than significant** and no further analysis on hazardous materials handling during Project construction and operation is required in the Project EIR.

b. Would the project 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?

As discussed above under Section 5.11.1.a, the transport of hazardous materials during project construction and operation would be conducted in accordance with all applicable State and federal laws. The transport of any hazardous materials to the campus would be conducted in accordance with the Hazardous Materials Transportation Act (49 U.S. Code 5101 et seq.) and other State and federal requirements. Nonradioactive chemicals, biohazardous materials, and other packages for offices and laboratories may be delivered by outside carriers directly to receiving entrances at the proposed HBS-ME Building. Alternatively, incoming packages may be delivered at the campus main receiving facility for UC Merced personnel to deliver to campus locations, such as the proposed HBS-ME Building. However, transportation of hazardous materials around the campus would increase the possibility of accidents capable of exposing people on and off campus to hazardous materials. To minimize the potential for accidental spills of hazardous materials during transit, suppliers and transporters are and would continue to be required to follow stringent U.S. DOT regulations for packaging and handling.

Hazardous waste leaving the campus or the proposed HBS-ME Building would be packaged in drums and containers that meet U.S. DOT packaging requirements. As a result of U.S. DOT performance packaging specifications, containers are less likely to be damaged and release their contents in the event of an accident. Although transportation of hazardous materials has associated risks of spills or releases, management of transported wastes in compliance with applicable hazardous materials transportation regulations (e.g., California Code of Regulations, Title 4, *Business Regulations*) would help to minimize the risk.

Due to the relatively small amounts of hazardous materials involved and compliance with applicable transport regulations, the impact of the proposed Project with respect to creating a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be **less than significant**. No further analysis is required in the Project EIR.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

There are no existing K-12 schools within one-quarter mile of the UC Merced campus or the proposed Project site. Implementation of the proposed Project would not emit hazardous emissions

or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. **No impact** would occur, and no further analysis is required in the Project EIR.

- d. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

Impacts related to hazardous materials sites were evaluated in the 2020 LRDP SEIR and were found to be potentially significant. The analysis concluded that the impacts from unknown hazardous materials sites would be reduced to a less-than-significant level with adherence to Campus policies and implementation of **2020 LRDP Mitigation Measure HAZ-4**. The proposed Project site has been disturbed by previous grading activities; however, no hazardous materials sites have been found within the footprint of the proposed Project area. According to the California Department of Toxic Substance Control EnviroStor website there are no known hazardous waste sites located within 1,000 feet of the Project site.²³ The proposed Project would also implement **2020 LRDP Mitigation Measure HAZ-4** in the event hazardous materials sites are revealed during construction activities associated with the proposed Project. Impacts would be **less than significant**, and no further analysis is required in the Project EIR.

- e. Would the project be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

The UC Merced campus and the proposed Project site is not located within an airport land use plan or within 2 miles of a public use airport. Therefore, **no impact** would occur, and no further analysis is required in the Project EIR.

- f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

UC Merced has adopted both an Emergency Operations Plan and a Crisis Communications Plan that the proposed Project would abide by. The Campus emergency response team is trained and equipped to respond to hazardous materials emergencies. In the event of such an emergency at the Project site, UC Merced would provide sufficient resources to respond to a Level A hazardous materials incident (the most hazardous level), in coordination with the County of Merced, if necessary. In addition, UC Merced would prepare (or update) safety planning documents in accordance with California Health and Safety Code Section 25517.5, as well as applicable laws, regulations, and Campus policies in association with the proposed Project. The Campus would implement safety training programs upon occupying the proposed HBS-ME Building to ensure efficient implementation of any emergency response plan. In addition, each department occupying the proposed HBS-ME Building would be responsible for preparing and implementing its own emergency action plan. These plans would contain detailed procedures for proposed HBS-ME

²³ California Department of Toxic Substances, EnviroStor Website, <https://www.envirostor.dtsc.ca.gov/public/> (Accessed January 29, 2021).

Building occupants to follow in the event of various emergencies and evacuations. The proposed HBS-ME Building would be assigned a building safety coordinator who would address emergency planning and safety training for the occupants, employees, staff, and students occupying the proposed Project. In addition, the UC Merced Police Department would make the necessary contact with EH&S in the event of a minor spill or release at the proposed HBS-ME Building. For these reasons, development of the proposed Project would not impair implementation of physically interfere with any emergency response plan or emergency evacuation plan and the impact is considered **less than significant**. No further analysis is required in the Project EIR.

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Because high-fire-risk grazing pastures surround the UC Merced campus on all sides, the growth in population due to the 2020 LRDP and the proposed Project would translate into a greater potential for wildland and urban fires along with a greater number of people exposed to fires on and off campus. Adequate wildland fire defenses and responses to wildland fires are a priority for the State. In recognition of the severity of wildland fire hazards in certain areas of California, the State has enacted legislation (i.e., California PRC Section 4291) requiring local jurisdictions to adopt minimum recommended road standards for fire equipment access; standards for identifying streets, roads, and buildings minimum private water supply reserves for emergency fire use; and standards for fuel breaks and greenbelts to achieve fuel reductions. The UC Merced campus has been designed to minimize human intrusion into the adjacent Campus Natural Reserve (CNR) lands by way of landscaping and fencing.

The UC Merced campus would use the Management Plan for Conservation Lands as a guide to balance fire prevention and suppression methods with protection of natural resources and biodiversity. The Management Plan for Conservation Lands has four distinct goals regarding fire protection and management that would be applicable to the proposed Project: (1) develop fire protection that emphasizes public safety and protection of university properties, especially in the interface areas; (2) prevent a substantial increase in fire frequency from “pre-university” (i.e., before development of the campus) conditions to maintain the natural habitat; (3) minimize ground-disturbing fire prevention and suppression methods (e.g., fuel breaks); and (4) use prescribed fire as a management tool to control invasive weeds that threaten biodiversity. Therefore, with the implementation of fire prevention measures noted above and adherence to the guidelines of the Management Plan for Conservation Lands, the proposed Project’s impact with respect to wildland fires would be reduced to **less than significant**. No further analysis is required in the Project EIR.

5.11.2 Cumulative Impacts

The 2020 LRDP SEIR found that exposure to toxic air contaminants from research and development (R&D) uses in the area, including future R&D uses on the campus such as the proposed Project, could result in a potentially significant cumulative impact. However, the contribution of the 2020 LRDP to the cumulative impacts would not be cumulatively considerable based on data from other UC campuses. As discussed above, implementation of the proposed Project would comply with federal, state, and local regulations, adhere to UC policies, and implement adopted mitigation measures and thus would not change this conclusion. As a result, cumulative impacts pertaining to

proposed Project implementation were adequately addressed in the 2020 LRDP SEIR. There are no changes in circumstances or new information that would change the conclusions of the SEIR regarding cumulative impacts. No further analysis of cumulative hazards and hazardous materials impacts is required in the Project EIR.

5.11.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measure that was adopted at the time of the approval of the 2009 LRDP and/or the 2020 LRDP would apply to the proposed Project:

2020 LRDP MM HAZ-4: In the event that non-permitted disposal sites, trash burn pits, wells, underground storage devices, or unknown hazardous materials are encountered during construction on the campus site, construction activities would cease until all contaminated areas are identified, and remediated or removed. This process of identification and remediation or removal would be coordinated with the Merced County Division of Environmental Health.

5.11.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

As the Project would not result in any new or more severe impacts to hazards and hazardous materials than the impacts that were previously analyzed and disclosed in the 2020 LRDP SEIR, no Project-specific mitigation measures are required.

5.12 HYDROLOGY AND WATER QUALITY

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i. Result in substantial erosion or siltation on- or off-site;	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Impede or redirect flood flows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.12.1 Impact Analysis

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

As described in the 2020 LRDP SEIR, impacts on water quality from the development of the UC Merced campus and University Community North were evaluated in the 2009 LRDP EIS/EIR and were found to be less than significant. Construction activities under the 2020 LRDP, which account for the proposed HBS-ME Building Project, could result in soil erosion and release of sediment into receiving waters. Spills or leaks from heavy equipment and machinery (petroleum products and other heavy metals) in staging areas and building sites could also adversely affect receiving water quality.

However, according to federal law, all construction projects that involve disturbance of more than 1 acre of land (or disturb less than 1 acre but are part of a larger project that in total disturbs more than 1 acre) are subject to NPDES regulations for storm water. All such projects are required by law to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-009-DWQ) and prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) during construction. The SWPPP must be kept on site during construction activity and made available upon request to representatives of the Regional Water Quality Control Board (RWQCB). The SWPPP is required to include a description of potential pollutants and the manner in which sediments and hazardous materials present on site during construction (including vehicle and equipment fuels) would be managed. The SWPPP must also include details of how the sediment and erosion control best management practices (BMPs)

would be implemented. Adherence to NPDES regulations would help to ensure that adverse impacts on water quality are minimized and avoided.

The 2020 LRDP SEIR concluded that wastewater generated on the campus under the 2020 LRDP would be similar to wastewater discharged from other parts of the City and would not contain constituents in concentrations that could cause the City's wastewater treatment plant (WWTP) to exceed the waste discharge requirements that apply to the discharge of treated effluent. The use of hazardous chemicals or biohazardous materials may occur in the teaching and research laboratories within the proposed HBS-ME Building. As such, the proposed building would be subject to the discharge constraints of the City of Merced Code of Ordinances, Title 15, *Public Service*, Division I, *Sewer System*, Chapter 15.24.050, *Prohibition on Discharge*. In addition, the Campus EH&S provides compliance support to researchers for the handling of these wastes on the campus. EH&S also provides compliance support to research personnel in order to meet sanitary sewer disposal guidelines for all campus laboratories. The City's ordinance prohibits the discharge of hazardous chemicals into sanitary drains in laboratories on the campus. As the proposed Project would adhere to local regulatory compliance requirements and also comply with State law, the risk of the City's WWTP exceeding waste discharge requirements related to the discharge of treated effluent would be minimal.

As all campus development under the 2020 LRDP, including the proposed HBS-ME Building Project, would adhere to these requirements, the proposed Project would not result in a new or more severe impact on water quality than what was previously analyzed and disclosed in the 2020 LRDP SEIR. Therefore, the proposed Project's potential to violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality would represent a **less-than-significant** impact. No additional analysis is required in the Project EIR.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Impacts on groundwater supplies from the development of the 1,026-acre campus were evaluated in the 2020 LRDP SEIR and determined to be less than significant. As described in Section 4.4 of the 2020 LRDP SEIR, the development of additional impervious surfaces on the campus such as new buildings, roads, paths and parking lots, would normally have the potential to reduce recharge of the underlying aquifer. However, campus development under the 2020 LRDP, which includes the proposed HBS-ME Building Project, would not substantially reduce recharge compared to existing conditions for a number of reasons. The campus is located in an area that is known to have soil types with low to moderate recharge potential. There are substantial amounts of clay in the campus site soils, which restrict the ability of surface water to percolate into the groundwater aquifer. Also, a clay hard pan exists near the ground surface that further inhibits the potential of surface water to infiltrate down to the groundwater aquifer. Therefore, groundwater recharge under pre-development conditions is generally low on the campus site. Further, the Campus's Water Action Plan sets forth a number of near- and long-term actions that would be reflected in the proposed HBS-ME Building Project design, including: (1) incorporation of green infrastructure and low-impact development strategies into site design in order to manage 30 to 50 percent of total volume runoff on-site, and (2) incorporation of retention basins into site design and development to capture 100

percent of campus storm water under normal precipitation conditions. Therefore, consistent with the analysis in the 2020 LRDP SEIR, implementation of the proposed Project would not substantially interfere with recharge such that aquifer volume would be affected, and the impact related to groundwater recharge would be **less than significant**. No additional analysis is required in the Project EIR.

The proposed Project would increase demand for potable water, which would be drawn from the Merced Subbasin by the City and supplied to the campus. The subbasin is currently in a condition of overdraft. The 2020 LRDP SEIR evaluated the impact of campus development under the 2020 LRDP for its potential to decrease groundwater supplies. As described in the 2020 LRDP SEIR, based on a water use factor of 31.4 gallons per capita per day (gpcd) and the 2030 population projections for the campus, projected water demand for the campus was conservatively estimated to be approximately 612 acre-feet per year (AFY) by 2030. This estimate is considered conservative because it does not take into account further reductions in campus water use due to UC Merced's implementation of its Water Action Plan in compliance with the UC Sustainable Practices Policy. Furthermore, the estimated campus water demand is approximately 56 percent lower than the City of Merced's 2015 Urban Water Management Plan (UWMP) 2030 estimate for the campus of 1,406 AFY. The 2015 UWMP also concluded that the City has an adequate groundwater supply to meet water demands during normal, single-dry, and multi-dry years. Therefore, although the implementation of the 2020 LRDP would increase the amount of groundwater that would be withdrawn from the Merced Subbasin compared to existing conditions, the amount is substantially less than the amount accounted for UC Merced in the City's UWMP.

The anticipated population increase associated with the proposed HBS-ME Building Project (i.e., 2,999 students, faculty, and staff) is within the projected 2020 to 2030 campus population increase that was analyzed in the 2020 LRDP SEIR (i.e., 6,431 students, faculty, and staff). Therefore, the proposed Project would not increase the demand for potable water or require extraction of groundwater in excess of what was previously analyzed in the 2020 LRDP SEIR, and would result in a **less-than-significant** impact related to the substantial decrease of groundwater supplies. No additional analysis is required in the Project EIR.

- c. *Would the project substantially alter 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 which would:*
- i. *Result in substantial erosion or siltation on- or off-site;*
 - ii. *Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;*
 - iii. *Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or*
 - iv. *Impede or redirect flood flows?*

The 2020 LRDP SEIR analyzed the changes in drainage patterns as a result of campus development under the 2020 LRDP. The analysis concluded that the impacts from 2020 LRDP campus development would be less than significant. With the development of the Phase 1 campus and the 2020 Project, storm water from developed surfaces is collected by the campus storm drain system

and discharged into a number of detention facilities that are designed to hold flows from a 100-year, 24-hour storm. As part of the 2020 Project, additional detention facilities were added within Cottonwood Meadow, as shown in **Figure 2**. The detention facilities were sized to accommodate both the peak flows and the total volume of storm water runoff associated with the 2020 Project before discharge into Cottonwood Creek or other receiving waters and avoid potential flooding and erosion/siltation impacts in downstream areas.

The proposed Project, which is located within the Cottonwood Meadow storm water management area, would both increase the impervious surface area in the southeastern portion of the campus and decrease the existing storm water holding capacity of the existing facilities in Cottonwood Meadow. Therefore, the proposed Project would have the potential to increase the rate and amount of runoff, and if the runoff were not controlled, the increased runoff could result in (or exacerbate) flooding as well as potential hydromodification (i.e., erosion and scour) in downstream drainages, including Cottonwood Creek. Thus, the proposed Project's potential to substantially alter drainage patterns on the campus will be evaluated in the Project EIR.

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

As described in the 2020 LRDP SEIR, the campus, including the Project site, is not within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map. In addition, Lake Yosemite, which is located approximately 0.5 mile northeast of the Project site, has not historically produced seiches in association with tectonic activity. As a result, the campus is not at risk of seiche or tsunami inundation. Therefore, there would be **no impact** with regard to these criteria. No additional analysis is required in the Project EIR.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

As discussed above in **Section 5.12.1.a**, the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality; therefore, the proposed Project would not conflict with or obstruct the implementation of the RWQCB's 2018 basin plan for the Central Valley Region,²⁴ which encompasses both the Sacramento River and San Joaquin River Basins.

As described in Section 4.4 of the 2020 LRDP SEIR, a Groundwater Sustainability Plan (GSP) was developed for the Merced Subbasin and was adopted in November 2019. Per the GSP, current agricultural and urban groundwater demand in the Merced Subbasin would need to be reduced by approximately 10 percent in order to balance out the change in groundwater storage over a long-term average condition, based on modeling of current and projected subbasin conditions and absent implementation of any new supply-side or recharge projects. As discussed above in **Section 5.12.1.b**, on both a per capita basis and total demand basis, UC Merced has reduced its demand

²⁴ Regional Water Quality Control Board, Central Valley Region (CVRWQCB). 2018. The Water Quality Control Plan (Basin Plan) for the Sacramento River Basin and the San Joaquin River Basin. Fifth Edition. May.

substantially from previous levels and the reductions are significantly more than the required 10 percent water demand reduction identified in the GSP to bring the groundwater subbasin into balance. The Campus will continue to implement actions to reduce use of potable water, as reflected in the 2020 LRDP SEIR. The Campus will also continue to work with the City and the Merced Irrigation District (MID) to identify other sources of water, including the use of canal water for irrigation and other non-potable uses.

Therefore, the Project would have a **less-than-significant** impact with respect to these criteria. No additional analysis is required in the Project EIR.

5.12.2 Cumulative Impacts

As discussed above, the Project would not violate any water quality standards or waste discharge requirements nor would it substantially degrade water quality. In addition, the Project would not be constructed within a 100-year flood hazard area or be located within a seiche or tsunami inundation area. For these reasons, the Project would not contribute to a cumulative impact with respect to these topics. No additional analysis of cumulative impacts related to these topics is required in the Project EIR.

The 2020 LRDP SEIR determined that the 2020 LRDP would have a significant and unavoidable cumulative impact related to the depletion of groundwater supplies and, in conjunction with other past, present, and reasonably foreseeable future development, would contribute to the overdraft of the Merced Subbasin. The implementation of **2020 LRDP Cumulative Mitigation Measure C-HYD-2** would reduce the impact; however, the impact would remain significant and unavoidable. The proposed Project includes a population increase that is within the projected campus population increase between 2020 and 2030 that was analyzed in the 2020 LRDP SEIR. Therefore, the Project's contribution to this cumulative impact is already accounted for. As with campus development under the 2020 LRDP, the proposed Project would make a cumulatively considerable contribution to the cumulative impact on groundwater supplies. No additional analysis cumulative groundwater supply impacts is required in the Project EIR.

Potential cumulative impacts with respect to the alteration of existing drainage patterns will be addressed in the Project EIR.

5.12.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measure that was adopted at the time of the approval of the 2020 LRDP would apply to the proposed Project:

2020 LRDP Cumulative MM C-HYD-2: UC Merced shall work with the regional water agencies, including the City of Merced and MID, to develop programs to expand conjunctive use capabilities, increase recharge, and reduce groundwater demand.

5.12.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

If Project-level mitigation measures are required related to potential impacts on storm water discharges, they will be disclosed in the Project EIR.

5.13 LAND USE AND PLANNING

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Physically divide an established community?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.13.1 Impact Analysis

a. Would the project physically divide an established community?

The Project site is located within the existing UC Merced campus and within the boundary of the 2020 LRDP. The proposed Project is intended to address the need for additional academic and research uses on the campus and would be integrated into the overall campus development plan specified in the 2020 LRDP. There is no existing community within the UC Merced campus or adjacent to the UC Merced campus or Project site. As such, implementation of the proposed Project would not physically divide an established community. **No impact** would occur and no additional analysis in the Project EIR is required.

b. Would the project 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?

UC Merced is a State entity and not subject to regional or local land use controls. As the proposed Project is located on the UC Merced campus, it would not be subject to land use plans, policies or regulations adopted by the City of Merced or Merced County to avoid or minimize an environmental effect. The land use plan that is applicable to the Project is the 2020 LRDP. The 2020 LRDP was designed to guide the future development of the campus in a manner that would avoid and minimize any adverse effects of campus growth and development. The proposed Project would not conflict with the 2020 LRDP. It would be located in an area that is designated CMU, which allows for the siting of academic buildings and would be designed in compliance with development standards in the 2020 LRDP and the Physical Design Framework of the UC Merced campus. Further, the increase in building space and campus population attributable to the proposed Project is within the growth projections of the 2020 LRDP. As such, implementation of the proposed Project would not cause a significant environmental impact due to a conflict with the 2020 LRDP. Impacts would be **less than significant** and no additional analysis in the Project EIR is required.

5.13.2 Cumulative Impacts

The 2020 LRD SEIR found that the 2020 LRDP would not result in any cumulative impacts related to land use. The increase in building space and campus population attributable to the proposed Project are within the growth projections of the 2020 LRDP. Therefore, the cumulative impact of the proposed Project is captured in the cumulative impact of the 2020 LRDP. Further, there are no changes in circumstances that would change the conclusions of the prior analysis. The cumulative

impacts of the proposed Project are adequately addressed in the 2020 LRDP SEIR. Further analysis of cumulative land use impacts in the Project EIR is not required.

5.13.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The 2020 LRDP SEIR did not require mitigation measures under this resource topic as no potentially significant impacts associated with land use and planning were identified.

5.13.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

As the Project would not result in any new or more severe impacts to land use and planning than the impacts that were previously analyzed and disclosed in the 2020 LRDP SEIR, no Project-specific mitigation measures are required.

5.14 MINERAL RESOURCES

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.14.1 Impact Analysis

- a. *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*
- b. *Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*

As discussed in Appendix A of the 2020 LRDP SEIR, the campus, including the Project site, is not located on land designated as a mineral resource zone (MRZ). The Merced County General Plan Environmental Impact Report indicates the County's primary mineral resources are sand and gravel mining operations, with significant aggregate deposits concentrated along the San Joaquin River and its tributaries, including the Merced River.²⁵ These areas are not near the Project site. Implementation of the proposed Project would not result in the loss of availability of a known mineral resource that would be valuable to the region and residents of the state. **No impact** would occur. Further analysis in the Project EIR is not required.

5.14.2 Cumulative Impacts

No mineral resource zones or mineral resource recovery sites exist on the campus or in the nearby surrounding region. Development of the proposed Project would not contribute to a cumulative impact on mineral resources. Further analysis of cumulative mineral resources impacts in the Project EIR is not required.

5.14.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The 2020 LRDP SEIR did not include mitigation measures under this resource topic as no potentially significant impacts associated with mineral resources were identified.

5.14.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

As the Project would not result in any new or more severe impacts to mineral resources than the impacts that were previously analyzed and disclosed in the 2020 LRDP SEIR, no Project-specific mitigation measures are required.

²⁵ Merced County, 2030 Merced County General Plan, Draft Program Environmental Impact Report, Geology, Soils, and Mineral Resources, pg. 10-5 and Figure 10-3, November 2012.

5.15 NOISE

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project result in:		
a. 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. 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, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The proposed Project site is located within the UC Merced campus, which is located in eastern Merced County, east of Lake Yosemite and Lake Road, and approximately 2 miles northeast of the jurisdictional limits of the City of Merced. Other than existing storm water detention facilities and staging areas associated with other campus development activities, the Project site is largely undeveloped and no major fixed noise sources exist on the site. Noise sources in the vicinity of the Project site include existing campus activity immediately to the west, as well as traffic on local and campus roadways and noise from off-campus agricultural operations to the south and southeast. Single-family residential units located on East Bellevue Road and Lake Road (southwest of the site) are the nearest off-campus sensitive receptors from the proposed Project. The Glacier Point student housing is located approximately 90 feet from the Project site and the Arts and Computational Sciences Building is located approximately 70 feet from the Project site. The Arts and Computational Sciences Building is the closest noise sensitive receptor to the proposed Project since academic activities occur within the building.

No heavily traveled roads or freeways are within the vicinity of the proposed Project site on the UC Merced campus. SR 99, SR 59, and SR 140 are all located about 2.5 miles or further from the Project site and do not affect noise levels in the Project area. Nearby roadways tend to be light to moderately traveled, at moderate vehicle speeds, and do not handle large volumes of heavy-duty trucks or buses. As such, while motor vehicle traffic causes noise within the proposed Project site and tends to be the primary noise source in locations adjacent to traveled roadways, the resulting noise levels are not excessive. The 2020 LRDP SEIR estimated that ambient roadway noise level on Lake Road is about 59.7 dB(A) CNEL at 75 feet while the modeled roadway noise level on Bellevue Road is about 60.5 dB(a) CNEL at 75 feet. It is noted that noise levels along these roadways are likely slightly higher than these modeled levels due to the contribution of noise from other non-roadway noise sources.

Off-site stationary and area noise sources include common building or home mechanical equipment, such as air conditioners, ventilation systems, or pool pumps, and industrial or agricultural operations. These noise sources become a concern when they are in close proximity to land uses where people would be sensitive to noise. No industrial or manufacturing facilities are located on or near the Project site or UC Merced campus; however, some agricultural-related operations and land maintenance activities cause occasional, daytime noise within the area of the proposed Project.

Construction activities associated with the 2020 Project occurred between 2016 and 2020. All of the buildings and other facilities under the 2020 Project have been developed and are operational. These facilities contribute to the existing ambient noise levels on campus near the Project site. Typical campus generated noise includes people talking, landscaping and maintenance activities, truck deliveries, and on-campus vehicle circulation. The proposed Project would be developed adjacent to the 2020 Project facilities on land that has been previously graded and disturbed.

Overall, traffic and campus activity are the dominant noise sources in the Project area.

5.15.1 Impact Analysis

- a. *Would the project result in 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?*

Operational Noise

The 2020 LRDP SEIR analyzed the potential for campus development through 2030 under the 2020 LRDP to result in noise impacts. The proposed Project (development of the proposed HBS-ME Building) is part of the UC Merced campus development occurring under the 2020 LRDP because both the increase in campus population and the new building space that would be added to the campus by the Project are accounted for in the growth assumptions of the 2020 LRDP; as such, the operational noise impacts of the proposed Project are adequately analyzed as part of the 2020 LRDP SEIR noise impact analysis.

The campus development under the 2020 LRDP, including that of the proposed Project, would increase traffic volumes on the local roadway network compared to existing conditions. Such an increase in traffic volumes would have the potential to result in increased traffic noise levels at noise-sensitive receptors located along Bellevue and Lake Roads. There are some existing residential receptors along Bellevue and Lake Roads that would be exposed to noise from traffic on the two roadways. Most homes on Lake and Bellevue Roads are set back about 100 feet from the center of the road. However, a small number of homes along Bellevue Road are located about 80 feet from the roadway.

Noise increases due to 2020 LRDP-related traffic on Bellevue and Lake Roads were calculated in the 2020 LRDP SEIR by comparing the 2020 LRDP traffic noise levels to no 2020 LRDP (Background) traffic noise levels within the same time frame. Background plus 2020 LRDP traffic on Bellevue Road would cause the ambient noise levels to increase from 58.5 dBA L_{dn} (East of SR 59) and 59.6 dBA L_{dn} (East of G Street) at the present time to about 61.1 dBA L_{dn} (East of SR 59) and 62.6 dBA L_{dn} (East of G Street) under 2030 conditions. Noise levels at residences at a distance of up to 80 feet from this roadway would experience a slightly higher noise level increase. Along Lake Road, noise levels would increase from about 60.9 dBA L_{dn} (South of Bellevue) and 61.0 dBA L_{dn} (South of Cardella) at the present time to about 61.6 dBA L_{dn} (South of Bellevue) and 62.6 dBA L_{dn} (South of Cardella) in 2030. The resulting noise levels in 2030 along both roadways would not exceed the exterior noise standard of 65 dBA L_{dn} that is applicable to residential land uses in Merced County. Furthermore, although the 2020 LRDP would cause noise increases along both roadways, the increase would be less than 3

decibels. The proposed Project would add approximately 182,698 gsf of building space on the campus, which is well within and a small fraction of the 1.83 million gsf building space increase evaluated in the 2020 LRDP SEIR. The anticipated population increase associated with the proposed HBS-ME Building Project (i.e., 2,999 students, faculty, and staff) is also within the projected 2020 to 2030 campus population increase that was analyzed in the 2020 LRDP SEIR (i.e., 6,431 students, faculty, and staff). The proposed Project's contribution to traffic-related increases in ambient noise levels is adequately analyzed in the 2020 LRDP noise analysis and determined to be a less-than-significant impact. Furthermore, if the traffic noise increase due to the proposed Project were to be separately calculated, it would be well below the significance criteria for a significant traffic noise impact (Under the 2020 LRDP SEIR criteria, a noise impact would be considered significant if the proposed Project causes an increase of 5 dBA or more, where the noise levels without the proposed Project are 50 to 65 dBA L_{dn} for residential uses and the increase in noise from the proposed Project does not cause the significance thresholds to be exceeded). The traffic added by the proposed Project would not generate noise that would exceed this threshold.

Daily noise-generating activities associated with the proposed Project would include student gatherings and conversations, landscaping and maintenance activities, on-site traffic, and mechanical equipment noise. The closest off-campus noise-sensitive receptors to the proposed Project include residences along Lake and Bellevue Roads to the west (approximately 0.60 miles from the Project site). As a result of the intervening distance and the fact that noise levels generated by the activities associated with the proposed Project would generally be low at the source, noise generated by daily activities at the proposed HMS-BE Building is not expected to exceed the noise standard of 65 dBA L_{dn} exterior and 45 dBA L_{dn} interior at off-site residential locations. Off-site receptors are not expected to be exposed to noise levels in excess of the standards for noise-sensitive uses with implementation of the proposed Project.

On-site noise-sensitive receptors, including student housing and academic buildings on the campus, could be exposed to excessive noise associated with proposed Project operation. For instance, noise levels could be elevated from the operation of commercial-grade heating, ventilation, and air conditioning (HVAC) systems associated with the proposed HBS-ME Building. However, noise levels associated with typical commercial grade HVAC systems can be reduced to below the noise standard for residences and academic buildings at a distance of less than 50 feet from the source with the use of standard attenuation barriers. As a result, on-site receptors are not expected to be exposed to noise levels in excess of the standards for noise-sensitive uses with implementation of the proposed Project.

Construction Noise

The proposed Project would also generate temporary construction noise as construction activities occur. Construction activities occurring at the proposed building site, within Cottonwood Meadow, or in the construction staging area would occur at a distance of more than 0.50 miles from nearest sensitive receptors located along East Bellevue and Lake Roads.

As described in the 2020 LRDP SEIR, noise generated by construction activities is anticipated to be greatest during site grading activities and excavation for underground utilities. Noise generated during foundation and building construction would be lower. Maximum noise levels at a distance of

50 feet from the source would typically range from 70 to 90 dBA during excavation and grading activities and from 65 to 85 dBA during building construction. Hourly average construction noise levels measured at a distance of 50 feet from the Project site are typically 75 dBA to 85 dBA during busy construction periods. Hourly average construction noise levels would typically range from 74 to 85 dBA at a distance of 50 feet from the center of construction activities and 56 to 71 dBA at a distance of 400 feet, not taking into account shielding from buildings or terrain. Maximum noise levels would typically range from 70 to 90 dBA at a distance of 50 feet and 52 to 72 dBA at a distance of 400 feet. Construction noise levels decrease at a rate of about 6 dBA per doubling of distance between the source and receptor. Shielding by buildings or terrain often results in much lower construction noise levels at distant receptors. Daytime construction noise would be exempt from the County's Ordinance and would result in a less-than-significant impact. A significant noise impact would occur if construction activity is predicted to result in: (1) maximum noise levels exceeding 75 dBA L_{max} at any residential property or 80 dBA L_{max} at any non-residential property between the hours of 6:00 p.m. and 7:00 a.m.; (2) an hourly average sound level that is more than 10 dBA L_{eq} above the ambient sound level between the hours of 6:00 p.m. and 10:00 p.m.; or (3) an hourly sound level more than 5 dBA L_{eq} above the ambient sound level between the hours of 10:00 p.m. and 7:00 a.m.

Due to the distance between the sensitive receptors along East Bellevue and Lake Roads and the construction area of the proposed HBS-ME Building, Cottonwood Meadow basins, and the staging area (greater than 0.50 mile), construction noise would not exceed the standards listed above. Furthermore, the proposed Project would implement **2020 LRDP Mitigation Measure NOI-3** (described below in **Section 5.13.3**), which would further minimize the less-than-significant construction noise impact.

Construction activities at the Project site could occur as close as 70 feet to the Arts and Computational Sciences Building and about 90 feet from the nearest on-campus student housing (Glacier Point student housing). Maximum construction noise levels at a distance of 70 feet from the source would typically range from 67.1 to 87.1 dBA during excavation and 62.1 to 82.1 dBA during building construction. Hourly average construction noise levels at a distance of 70 feet from the Project site would typically range from 62.1 dBA to 87.1 dBA during busy construction periods. Project construction would generate a predicted noise increase at the nearby academic building and on-campus residences that would exceed 5 dBA over ambient noise levels. However, implementation of **2020 LRDP Mitigation Measure NOI-3** would reduce the construction noise levels at the on-campus sensitive receptors to a less-than-significant level.

Overall, the proposed Project would not result in a substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed Project in excess of established standards. Impacts would be **less than significant**, and no additional analysis is required in the Project EIR.

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

The 2020 LRDP SEIR evaluated the potential impacts to on- and off-site sensitive uses from vibration generated by construction activities (specifically pile driver usage). Portions of the proposed Project site are located within 70 feet of on-campus buildings (i.e., the footprint where the proposed HBS-ME Building would be developed). At this time, it is not known if pile driving activities would be

needed for construction of the proposed building; however, as a conservative approach, the following analysis describes potential impacts associated with such construction activities.

Impact pile drivers are estimated to generate an upper range of 0.537 inch/second, peak particle velocity (ppv), at a distance of 25 feet and vibratory pile drivers are estimated to generate an upper range of 0.260 inches/second, ppv. At a distance of 70 feet, impact pile drivers are estimated to generate an upper range of 0.173 inches/second, ppv, and vibratory pile drivers are estimated to generate an upper range of 0.084 inch/second, ppv. Groundborne vibration levels at distances of approximately 70 feet or more would not result in vibration levels exceeding 0.20 inch/second, ppv and therefore would not be anticipated to result in substantial effects. Impact pile driving within 25 feet of structures could cause structural damage to typical building structures and could cause annoyance to campus occupants. Furthermore, at existing campus facilities, such as laboratories and on-campus residences, vibrations could have the potential to disrupt experiments. This is a potentially significant impact, and **LRDP Mitigation Measures NOI-4a** and **4b** are set forth below to mitigate this impact if pile driving activities are used during Project construction.

Overall, the proposed Project is not anticipated to result in generation of excessive groundborne vibration or groundborne noise levels. Impacts would be **less than significant**, and no additional analysis is required in the Project EIR.

c. 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, would the project expose people residing or working in the project area to excessive noise levels?

The Merced Municipal Airport is approximately 7 miles southwest of the Project site and the campus, and Castle Airport (the former Castle Air Force Base) is approximately 6 miles to the west. While noise from aircraft overflights is occasionally perceptible at the Project site, it does not substantially affect the noise environment. A review of the County's Noise Element indicates that the 65 dBA L_{dn} noise contours associated with the airports in the region do not encompass or include any portion of the Project site or the UC Merced campus. A private airstrip is located approximately 1.8 miles southeast of the Project site and UC Merced campus. The airstrip is used by planes involved in agriculture operations (e.g., fertilizing, seeding, and baiting). As the airstrip does not support commercial flights and is used for a limited number of agricultural flights, it is not anticipated that airstrip operations would expose the Project occupants to excessive noise levels.

Implementation of the proposed Project on the UC Merced campus would not expose people residing or working in the area to excessive noise levels from public and private airport/airstrip operations. **No impact** would occur, and no additional analysis is required in the Project EIR.

5.15.2 Cumulative Impacts

Cumulative noise impacts associated with the proposed Project were evaluated in the 2020 LRDP SEIR. The 2020 LRDP SEIR calculated L_{dn} noise levels at a distance of 100 feet from roadway links on the surrounding road network under Existing, 2035 No 2020 LRDP, and 2035 with 2035 UC Merced Campus Scenario traffic conditions. Background plus 2035 Campus Scenario traffic on Bellevue Road would cause the ambient noise levels to increase from less than 60.5 dBA L_{dn} at the present time to

slightly more than 63 dBA L_{dn} under 2035 conditions. Along Lake Road, ambient noise levels would increase from about 59.7 dBA L_{dn} at the present time to about 63 dBA L_{dn} in 2035. The noise levels in 2035 along both roadways would not exceed the exterior noise standard of 65 dBA L_{dn} that is applicable to residential land uses in Merced County. Furthermore, the 2020 LRDP related traffic would cause noise increases that would be less than 4 decibels. The SEIR thus concluded that the cumulative traffic noise impact of campus development under the 2020 LRDP would be less than significant. There are no changes in circumstances and no new information that would change the conclusions of the previous analysis.

As the Project's population and building space increases are within the population and space increases analyzed for the 2020 LRDP, the traffic increase due to the Project is also within the traffic increase that was evaluated in the 2020 LRDP SEIR for its cumulative impact on roadway noise. The proposed Project would generate a nominal percentage of the noise increase associated with the 2020 LRDP and, as with the 2020 LRDP, the proposed Project's cumulative impact on traffic noise would be **less than significant**. Further evaluation of cumulative traffic noise impacts in the Project EIR is not required.

With respect to cumulative construction noise and vibration impacts, those would occur only if the projects proposed by others or other campus projects were to be under construction the same time as the proposed Project and if these concurrent projects would be in close proximity of the same sensitive receptor. At this time, there are no other projects proposed in proximity to the campus that would be under construction at the same time as the proposed Project, and there are no other on-campus projects that are proposed for construction the same time as the proposed Project. Similarly, in order for the on-site stationary noise (HVAC, generators, pumps, etc.) associated with the proposed Project to accumulate with noise from other stationary noise sources, the noise sources would need to be in close proximity of the same sensitive receptor. At this time, there are no other projects proposed that would be in the vicinity of the same sensitive receptors as the proposed Project. For this reason, there would not be a cumulative noise impact with respect to construction noise or noise from stationary sources with implementation of the proposed Project. No additional analysis of cumulative construction noise impacts is required in the Project EIR.

5.15.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures that were adopted at the time of the approval of the 2009 LRDP and/or the 2020 LRDP would apply to the proposed Project:

2020 LRDP MM NOI-3: Prior to initiation of construction on a project that is within 500 feet of off-site residential receptors, UC Merced shall develop and implement a construction noise mitigation program for that project that includes but is not limited to the following:

- Construction activities within 500 feet of any residences shall be restricted to the hours of 7:00 AM and 6:00 PM on weekday and Saturdays with no construction on Sundays and holidays.
- All noise-producing project equipment and vehicles using internal combustion engines shall be equipped where appropriate with exhaust mufflers and air-inlet

silencers in good operating condition that meet or exceed original factory specifications.

- Mobile or fixed “package” equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
- All mobile or fixed noise-producing equipment used on the project that is regulated for noise output by local, state or federal agency shall comply with such regulation while engaged in project-related activities.
- Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where practicable.
- Material stockpiles, mobile equipment staging, construction vehicle parking, and maintenance areas shall be located as far as practicable from noise-sensitive land uses.
- Stationary noise sources such as generators or pumps shall be located away from noise sensitive land uses as feasible.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. No project related public address loudspeaker, two-way radio, or music systems shall be audible at any adjacent noise-sensitive receptor except for emergency use.
- The erection of temporary noise barriers shall be considered where project activity is unavoidably close to noise-sensitive receptors.
- The noisiest construction operations shall be scheduled to occur together to avoid continuing periods of the greatest annoyance, wherever possible.
- Construction vehicle trips shall be routed as far as practical from existing residential uses.
- The loudest campus construction activities, such as demolition, blasting, and pile driving, shall be scheduled during summer, Thanksgiving, winter, and spring breaks when fewer people would be disturbed by construction noise.
- Whenever possible, academic, administrative, and residential areas that will be subject to construction noise shall be informed a week before the start of each construction project.

2020 LRDP MM NOI-4a: UC Merced shall avoid impact pile driving where possible in vibration sensitive areas. Drilled piles or the use of vibratory pile driving will be used where geological conditions permit their use. For impact pile driving activities occurring within 50

feet of typical structures, limit groundborne vibration due to construction activities to 0.50 inch/second, ppv (limit of potential for damage to typical structures) in the vertical direction at sensitive receptors. Since in many cases the information available during the preliminary engineering phase would not be sufficient to define specific vibration mitigation measures, UC Merced shall describe and commit to a mitigation plan to minimize construction vibration damage using all feasible means available.

2020 LRDP MM NOI-4b: For construction adjacent to highly sensitive uses such as laboratories, UC Merced shall apply additional measures as feasible, including advance notice to occupants of sensitive facilities to ensure that precautions are taken in those facilities to protect ongoing activities from vibration effects.

5.15.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

As the Project would not result in any new or more severe impacts pertaining to noise than the impacts that were previously analyzed and disclosed in the 2020 LRDP SEIR, no Project-specific mitigation measures are required.

5.16 POPULATION AND HOUSING

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.16.1 Impact Analysis

- a. *Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

The UC Merced campus and the proposed Project are located in the County of Merced, which has a current (2020) population of 283,521. There are 95,627 residents that live in unincorporated areas of the County, while the remaining balance live in incorporated cities within Merced County. The City of Merced (the nearest incorporated City to the proposed Project) has a current (2020) population of 88,120 residents.²⁶ By 2035, the estimated population for Merced County will be 357,496 residents, while the estimated population for the City of Merced will be 109,986 residents.²⁷

The 2020 LRDP SEIR estimated that between 2020 and 2030, enrollment would increase from 9,700 FTE students to 15,000 students, an increase of about 5,300 students. Over the same period, faculty and staff would increase from 1,280 to 2,411, an increase of 1,131 persons. Overall, the campus population would increase by 6,431 persons (5,300 FTE students and 1,131 staff/faculty personnel) (Table 3). As such, by 2030 the UC Merced campus is projected to have a total population of 17,411 students, faculty, and staff. The 2020 LRDP SEIR determined that the UC Merced campus would be developed with additional housing to accommodate 50 percent of the 2030 student population. The remaining balance of students would be accommodated by housing within the City of Merced or in communities within a 40-mile radius of the campus. The SEIR also noted that all of the new employees would live off campus. The 2020 LRDP SEIR determined that enough housing is available and planned in the City of Merced and in communities within the 40-mile radius of the campus to house the new students and employees who would live off campus.

²⁶ California Department of Finance, E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2020 with a 2010 Census Benchmark, <https://www.dof.ca.gov/forecasting/demographics/Estimates/e-5/> (Accessed February, 2 2021).

²⁷ Merced County Association of Governments (MCAG), 2018 Regional Transportation Plan/Sustainable Communities Strategy for Merced County.

Table 3: Campus Student Population and Employees Under the 2020 LRDP

	2020 (projected)	2030	Projected Increase 2020-2030
Commuting Students	4,900	7,800	2,900
Resident Students	4,800	7,200	2,400
Subtotal	9,700	15,000	5,300
Faculty	440	786	346
Staff (on-campus)	840	1,625	785
Subtotal	1,280	2,411	1,131
Total Population (excluding dependents)	10,980	17,411	6,431

Source: University of California, Merced. 2020. UC Merced 2020 Long-Range Development Plan Subsequent Environmental Impact Report.

As discussed in **Section 2.4.5**, it is anticipated that the maximum number of persons accommodated by the proposed building would be 2,811 students and 188 faculty and staff, for a total of 2,999 persons. Of the 2,811 students, 1,542 are existing under-grad and post-grad students enrolled in the Psychological Sciences and Public Health departments and about 1,269 would be new students. Of the 188 faculty and staff, 139 are existing faculty and staff in the Psychological Sciences and Public Health departments, and about 49 would be new hires. Thus, 1,681 of the 2,999 persons that would occupy the proposed HBS-ME Building are already enrolled as students or employed by the Campus as of 2020, and therefore the net new population due to this Project would be on the order of about 1,318 persons.

As of 2020, the campus enrollment was about 9,000 FTE students and there were 3,667 student beds on the campus. Although due to COVID-19, the on-campus housing was not occupied in 2020, but if the number of beds is compared to the 2020 enrollment level, at this time, the campus can house about 41 percent of the 2020 student population. As reflected in **Table 4**, if the new students associated with the HBS-ME Building Project are added to the current enrollment, the total enrollment would be about 10,269 students. With no increase in on-campus housing, about 36 percent of the students would be housed on campus (i.e., 3,667 students) and the rest would seek off-campus housing (i.e., 6,602 students). Based on the existing 2020 UC Merced enrollment and on-campus housing inventory, the 1,269 new students generated by the proposed building would not be accommodated by existing on-campus housing. Assuming conservatively that two students generated by the proposed building would share a housing unit, 635 off-campus housing units would be needed, as shown in **Table 4**. If three students share a unit, fewer (about 423) housing units would be needed. As there is no on-campus housing for faculty and staff, the 49 new faculty and staff generated by the proposed building would not be housed on campus; as such, it is assumed they would live off campus, and 49 off-campus housing units would be required. Thus, an estimated 684 total off-site housing units would be needed by the new Project-related students and faculty/staff. If the backfill of the SSM Building is also taken into account, the proposed Project could generate a demand for about 1,125 to 1,594 off-campus housing units, assuming two to three students per housing unit.

Table 4: 2020 Enrollment and 2020 Enrollment with HBS-ME Building Student Scenarios and Housing Demands

	Number of Students (FTE)	Students in On-Campus Housing	Students in Off-Campus Housing	Estimated Number of Dwelling Units Needed Off Campus	Additional Housing Demand Compared to 2020 Baseline
2020 Enrollment	9,000	3,667	5,333	2,666	--
2020 Enrollment with HBS-ME Students	10,269	3,667	6,602	3,301	635

Source: University of California, Merced. 2021.

As stated above, the 2020 LRDP SEIR determined that enough housing is available and planned in the City of Merced and in communities within the 40-mile radius of the campus to house the new students and employees who would live off campus (see Table 4.6-9 in the SEIR for the estimated LRDP population housing demand and available supply). One of the off-site housing projects included in the City of Merced's list of projected housing—Merced Station, located near the intersection of East Yosemite Avenue and Lake Road—will add an estimated 270 student housing units with 885 beds in fall 2021. In addition, a mixed-use development project with commercial and residential uses, including student housing, is proposed on approximately 630 acres of land immediately south of the campus, owned by the Virginia Smith Trust (VST). The project is currently in the planning stages and will further increase housing inventory within a 40-mile radius of the UC Merced campus beyond what was projected in the 2020 LRDP SEIR.

It is acknowledged that the proposed Project would facilitate campus enrollment growth without a concurrent increase in on-campus student housing. However, the increase in campus enrollment due to the expanded and new programs in the HBS-ME Building would not occur immediately upon the completion of construction but would occur over a period of time following building completion. Similarly, the backfilling of vacated space in the SSM Building would occur incrementally over time. Further, the enrollment growth associated with the proposed Project is an element of the annual enrollment increase that is projected for UC Merced under the 2020 LRDP, and the HBS-ME Building occupancy would occur gradually within the 2020 LRDP planning horizon (i.e., by 2030). Thus, the students and employees associated with the proposed Project are a part of the population growth projected under the 2020 LRDP and are accounted for in the analysis of population and housing impacts of campus growth by 2030 as presented in the 2020 LRDP SEIR.

In summary, as enough housing is available and planned in the City of Merced and in communities within the 40-mile radius study area to house additional students, employees, and dependents that would relocate into the study area, the impact on population growth and housing would be **less than significant**. Further additional analysis in the Project EIR is not required.

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The proposed Project would be developed on a portion of the UC Merced campus that is currently vacant. No residential units or student housing is located on the proposed Project site. As such, implementation of the proposed Project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. **No impact** would occur, and no additional analysis is required in the Project EIR.

5.16.2 Cumulative Impacts

The 2020 LRDP SEIR analyzed cumulative effects on population and housing through the year 2035 even though the 2020 LRDP's horizon year is 2030. As described above, the staff/faculty/student population generated by the proposed Project is included in the population projections associated with the 2020 LRDP. The 2020 LRDP SEIR concluded that enough housing would be available in Merced and communities within a 40-mile radius of the campus through the year 2035. Therefore, the cumulative impacts of the proposed Project are adequately analyzed and accounted for in the 2020 LRDP SEIR; as such, cumulative impacts associated with the proposed Project would be **less than significant**. Further evaluation of cumulative population and housing impacts in the Project EIR is not required.

5.16.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The 2020 LRDP SEIR did not require mitigation measures under this resource topic as no potentially significant impacts associated with population and housing were identified.

5.16.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

As the Project would not result in any new or more severe impacts to population and housing than the impacts that were previously analyzed and disclosed in the 2020 LRDP SEIR, no Project-specific mitigation measures are required.

5.17 PUBLIC SERVICES

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:		
i. Fire protection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Police protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii. Schools?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv. Parks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v. Other public facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.17.1 Impact Analysis

- a. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

- i. *Fire protection?*

As described in the 2020 LRDP SEIR, the UC Merced campus is jointly served by the County of Merced Fire Department and Cal Fire. The County Fire Department responds to incidents at UC Merced with its engine company out of Fire Station 85, supplemented by a ladder truck from the Atwater fire station (as needed) and paid call firefighters (PCFs). UC Merced and the County have reached an agreement to increase staffing at Fire Station 85 to a minimum of two paid fire fighters 24 hours per day, seven days a week, thereby increasing the station's capacity to serve the campus in the near term.

Development under the 2020 LRDP would accommodate about 15,000 students by 2030. As described in Section 2.3.1 of the 2020 LRDP SEIR, based on an enrollment of 9,700 students in 2020, the campus population is projected to increase by about 5,300 students by 2030, and employment at the campus is projected to increase by 1,131 faculty and staff. The SEIR analysis found that because the growth on the UC Merced campus would occur incrementally over the planning horizon of the 2020 LRDP, there was not an immediate need for an increased fire service or additional resources from the fire department. However, if the demand for staff and equipment to serve new campus development resulted in the need for new or modified fire station facilities to house the additional staff and/or equipment, the environmental impacts from fire station construction would need to be evaluated and disclosed. The SEIR noted that the environmental impacts from an expansion of the existing County Fire Station No. 85 are expected be less than significant or less than significant with mitigation. It also noted that if the existing County fire station is expanded or a new

one is constructed by the County and significant environmental impacts requiring mitigation are identified by the County, the University will pay for its fair share of the cost of mitigation.

The proposed HBS-ME Building would increase the amount of building space on the campus compared to existing conditions, but the increase would be a small portion of the projected increase in building space under the 2020 LRDP (182,698 square feet of 1,830,000 square feet under the 2020 LRDP [about 10 percent of the additional building space projected to be developed under the 2020 LRDP]). Implementation of the proposed Project would also generate an increase in the number of students (an additional 2,811 students) and staff/faculty (an additional 188 staff/faculty) on the UC Merced campus.

The proposed HBS-ME Building would be developed to existing California Fire Building Code standards as well as UC Merced building code fire standards. The new building would be designed with a sprinkler system, fire extinguishers in various locations, and a fire alarm system to alert occupants in the event of a fire. The proposed building would be a maximum of four stories in height, similar to adjacent UC Merced campus buildings, allowing fire apparatus to adequately reach the top of the building in the event of a fire. Research that would be conducted in the proposed HBS-ME Building would involve a variety of research materials, including non-hazardous organic and inorganic materials, hazardous chemicals, and biological materials. The proposed HBS-ME Building would be built to safety standards that exceed the minimum requirements for the handling and storage of hazardous materials, including biohazardous materials. The storage, handling, use, and disposal of all hazardous materials, hazardous wastes and other scientific materials within the proposed HBS-ME Building would be subject to UC Merced EH&S program requirements. Additionally, UC Merced would coordinate with the Merced County Fire Department in providing fire department staff with locations of hazardous materials, the types of hazardous materials, and building evacuation plans in the event of a fire or release of hazardous materials that may occur within the proposed HBS-ME Building.

Implementation of the proposed Project could generate an incremental increase in the need for additional fire personnel and/or fire department equipment to provide adequate service to the proposed HBS-ME Building and UC Merced campus. Although the hiring of additional fire fighters and/or purchase of additional equipment to serve the proposed Project would not result in environmental impacts, environmental impacts could result if any modifications to the existing fire station or a new fire station are needed to accommodate the additional personnel and/or equipment. The proposed Project's potential to trigger the need for a new or modified fire station will be evaluated in the Project EIR. Should the Project trigger the need for a new or modified fire station, the EIR will evaluate whether the construction and operation of a new or modified fire station would result in significant environmental impacts.

ii. Police protection?

The UC Merced campus, including the Project site, is served by the UC Merced Police Department. To maintain the right staffing level, about 30 sworn officers would be required at full campus development under the 2020 LRDP. The 2020 LRDP land use diagram includes adequate land for the expansion of the campus public safety (police) building as needed. The environmental consequences of developing campus facilities, including additional police facilities, on land designated CMU in the

2020 LRDP were evaluated in the 2020 LRDP SEIR and were mitigated to a less-than-significant level by the mitigation measures included in the 2020 LRDP SEIR. The 2020 LRDP SEIR determined that environmental impacts associated with future campus police station expansion would be reduced to less-than-significant levels.

The proposed HBS-ME Building Project would increase the amount of building space on the campus compared to existing conditions, but the increase would be a small portion of the projected increase in building space under the 2020 LRDP (182,698 square feet of 1.83 million square feet under the 2020 LRDP [about 10 percent of the additional building space developed under the 2020 LRDP]). Implementation of the proposed Project would also generate an increase of students (an additional 2,811 students) and staff/faculty (an additional 188 staff/faculty) on the UC Merced campus. As described above in **Section 5.17.1.a (i)**, the size and nature of the proposed Project would not cause the campus population to increase over what was analyzed in the 2020 LRDP SEIR. In addition, the proposed HBS-ME Building would include exterior lighting and additional security features that would ensure that safety in the area is maintained and that the need for UC Merced Police Department services would not be substantially increased due to a substantial increase in calls for service.

The existing campus public safety building is currently at capacity, and a new or expanded building is in the early planning stages. Based on input from the UC Merced Chief of Police, the development of the proposed HBS-ME Building would require the hiring of additional policing staff.²⁸ UC Merced anticipates that the new or expanded public safety building would accommodate the additional police staff needed for the proposed Project. In the event that the expanded public safety building is not operational prior to the completion of the proposed Project, any additional police staff would be accommodated in other existing spaces on campus. Therefore, while additional police staff will be required, the Project itself would not generate the need for an expansion of the campus public safety building that would result in significant environmental impacts.

In summary, for reasons discussed above, implementation of the proposed Project would not increase the need for police services such that expanded facilities or new facilities would be required, the development of which could result in an environmental impact. As such, impacts would be **less than significant** and no additional analysis is required in the Project EIR.

iii. Schools?

As described in the 2020 LRDP SEIR, the campus, as well as the Project site, is located within the boundaries of the Merced City School District (MCSD), the Weaver Union School District (WUSD), and the Merced Union High School District (MUSHD). There are 14 elementary schools and 4 middle schools in the MCSD. Development of the UC Merced campus, and the proposed Project, under the 2020 LRDP would generate a demand for primary and secondary education facilities. The 2020 LRDP SEIR concluded that development of the campus under the 2020 LRDP would generate a total of 900 K-12 students. The approximately 900 K-12 students generated by development under the 2020

²⁸ Her, Chou, 2021. University of California, Merced Executive Director of Public Safety and Chief of Police. Personal Communication (email) with UC Merced Office of Planning, Design and Construction Management, March 17.

LRDP would be dispersed throughout the City of Merced as well as in other Merced County communities and in Mariposa and Stanislaus Counties. Using the same methodology of student generation that was presented in the 2020 LRDP SEIR, the proposed Project is anticipated to generate approximately 333 K-12 students,²⁹ all of which have been accounted for in the K-12 students projected to be generated under the 2020 LRDP. The K-12 students generated by the proposed Project represent 37 percent of the K-12 students estimated to be generated under the 2020 LRDP through 2030. As enrollment of the UC Merced campus grows and employees are hired within the parameters of the 2020 LRDP, homes will concurrently be developed throughout the surrounding area. Pursuant to SB 50, developers will be required to pay school impact fees as single-family homes or multi-family units are constructed. School impact fees are considered full and complete mitigation for school impacts. Students, faculty and staff associated with the proposed Project that are homeowners would also pay property taxes, a portion of which would go towards the funding of local K-12 public schools. Based on the above, the Project's impacts related to schools would be **less than significant**. No additional analysis is required in the Project EIR.

iv. Parks?

Lake Yosemite Regional Park is the closest facility to the UC Merced campus, including the proposed Project site. The Merced Irrigation District owns the 486-acre lake and the surrounding shoreline, and the County operates the park for recreational uses under a 50-year lease (1976 to 2026). The City of Merced Parks and Community Services Department maintains city parks and recreational facilities. Nearby community and neighborhood parks include Elmer Murchie Park, Fahrens Park, Bob Carpenter Neighborhood Park, Merino Park, Ranhilly Park, and Burbank Park.

As described in the 2020 LRDP SEIR, development of the campus under the 2020 LRDP would result in a residential population on the campus of about 7,200 students by 2030. As described above in **Section 5.17.1.a (i)**, the population increase associated with the proposed Project is accounted for as part of the anticipated campus growth between 2020 and 2030; thus, the on-campus residential population associated with the proposed Project is accounted for in the 7,200 students analyzed in the 2020 LRDP SEIR. As described in the 2020 LRDP SEIR, recreational facilities and open space that would be developed on the campus under the 2020 LRDP would adequately serve the needs of the on-campus residential population (including those of the proposed Project), as well as the daytime population of the UC Merced campus. Consequently, the population increase associated with the proposed Project would not result in demand for the construction of off-site recreational facilities. Implementation of the proposed Project would not trigger construction of new parks or require expansion of existing parks in areas outside of the UC Merced campus.

²⁹ For the purposes of this analysis, it was conservatively determined that all new faculty/staff under the proposed Project would relocate from outside the area; as such, approximately 188 employees would relocate from outside the area. It is assumed that 10 percent of UC Merced students generated by the proposed Project (281 UC Merced students with families) and all faculty/staff relocating from outside the area would also be accompanied by dependents. As such, the proposed Project would generate 233 K-8 students $([188 \times 0.496] + [281 \times 0.496])$ and 100 9-12 students $([188 \times 0.213] + [281 \times 0.213])$, for a total generation of 333 K-12 students.

Due to the proximity of Lake Yosemite Regional Park to the campus, as well as proposed Project site, and the range of unique water-related recreational amenities offered at the regional park that would not be available on campus, it is anticipated that new on-campus student residents as well as faculty and staff would use the regional park. As the proposed Project is part of the growth anticipated under the 2020 LRDP, it is assumed the students/staff/faculty generated by the Project would use the amenities at Lake Yosemite Regional Park. Because the Lake Yosemite Regional Park is currently at capacity during summer months, the 2020 LRDP SEIR conservatively assumed that the use of the park by the students could contribute to the acceleration of physical deterioration of the park facilities and contribute to the need for new park facilities. While the 2020 LRDP SEIR concluded that most of the increase in park facility use associated with the campus (i.e., between fall and late spring when school is in session) would not coincide with the current peak park use which occurs during summer, it nonetheless determined that the deterioration of existing park facilities could be accelerated and this was considered a potentially significant impact associated with implementation of development, including the proposed Project, under the 2020 LRDP.

The 2020 LRDP SEIR identified **2020 LRDP Mitigation Measures PUB-6a** through **PUB-6c** to reduce the impact on Lake Yosemite Regional Park from campus development, including the proposed Project, to a **less-than-significant** level. No additional analysis is required in the Project EIR.

v. Other public facilities?

UC Merced provides extensive library resources through its Leo & Dottie Kolligian Library, located on the campus at 5200 North Lake Road. The increased population associated with the proposed Project under the 2020 LRDP would result in increased demand for public library services compared to existing conditions. However, the library system of the campus would continue to meet the needs of a modern research and teaching institution, and thus provide a large array of library services, would continue to be available to students, staff, and faculty of the campus, as well as the general public on a limited basis. Therefore, consistent with the analysis in the 2020 LRDP SEIR, the impact on the City library system associated with implementation of the proposed Project would be **less than significant**. No additional analysis is required in the Project EIR.

5.17.2 Cumulative Impacts

The 2020 LRDP SEIR analyzed cumulative impacts to public services and determined that the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future developments in the Project area, would generate increased demand for public services, the provision of which would not result in significant cumulative impacts related to law enforcement services, fire protection services, elementary and secondary school facilities, and library services. As discussed above, the proposed Project is within the area and scope of the previous analysis, and the Project would not result in new or more severe impacts on public services. Therefore, the cumulative impacts of the Project are also fully analyzed in the 2020 LRDP SEIR. There are no changes in circumstances since the 2020 analysis that would change the conclusions of the prior cumulative analysis. Further evaluation of these public services impacts in the Project EIR is not required.

The 2020 LRDP SEIR concluded that implementation of the 2020 LRDP would not result in a cumulative impact related to neighborhood and community parks, but would result in a cumulative

impact associated with the deterioration of the Lake Yosemite Regional Park facilities from increased use. However, the contribution of the campus development under the LRDP to the deterioration of the Lake Yosemite Regional Park would not be cumulatively considerable due to the implementation of adequate mitigation (see **2020 LRDP Mitigation Measures PUB-6a** through **PUB-6c** below). There have been no changes in circumstances or new information since the certification of the 2020 LRDP SEIR that would alter the conclusions of the previous analysis. The proposed Project is within the area and scope of the previous analysis and would also implement these mitigation measures to avoid significant impacts on Lake Yosemite Regional Park. Thus, the cumulative impacts related to park facilities associated with the proposed Project are adequately addressed in the 2020 LRDP SEIR. Further analysis in the Project EIR of cumulative impacts on neighborhood and community parks is not required.

5.17.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures that were adopted at the time of the approval of the 2009 LRDP and/or the 2020 LRDP would apply to the proposed Project:

2020 LRDP MM PUB-6a: UC Merced shall work with the County to avoid physical deterioration of existing facilities at Lake Yosemite Regional Park, and/or improve park facilities within the existing park site as necessitated by the increased uses associated with development of the campus.

2020 LRDP MM PUB-6b: UC Merced will pay its fair share of the cost of necessary improvements to the regional park. UC Merced's share of funding will be based on the percentage that on-campus residential population represents of the total population in eastern Merced County at the time that an improvement is implemented.

2020 LRDP MM PUB-6c: In recognition of the sensitive resources present on lands immediately adjacent to the regional park, all regional park improvement projects that are implemented by the County within 250 feet of the park's eastern boundary pursuant to LRDP Mitigation Measures PUB-6a and PUB-6b above, will implement mitigation measures to avoid and minimize indirect effects on biological resources.

5.17.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

As the Project would not result in any new or more severe impacts to public services resources than the impacts that were previously analyzed and disclosed in the 2020 LRDP SEIR, no Project-specific mitigation measures are required.

5.18 RECREATION

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.18.1 Impact Analysis

- a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

Impacts on recreation facilities located at Lake Yosemite Regional Park from the development of the proposed Project under the 2020 LRDP was evaluated in the 2020 LRDP SEIR and **Section 5.17.1.a (iv)** of this Initial Study. The 2020 LRDP SEIR concluded that the population growth of the campus and the proposed Project through 2030 could contribute to the degradation of facilities at Lake Yosemite Regional Park. As such, **2020 LRDP Mitigation Measures PUB-6a** through **PUB-6b** would be applicable to the proposed Project thus reducing impacts to the Lake Yosemite Regional Park. Additionally, recreational facilities and open space that would be developed on the campus under the 2020 LRDP would adequately serve the needs of the residential population (including those of the proposed Project), as well as the daytime population of the UC Merced campus. Consequently, the population increase associated with the proposed Project would not result in demand for the construction of off-site recreational facilities. Implementation of the proposed Project would not trigger construction of new parks or require expansion of existing parks in areas outside of the UC Merced campus. Impacts would be **less than significant**, and no additional analysis is required in the Project EIR.

- b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

The land use diagram in the 2020 LRDP assigns nine acres for Active Open Space (athletic facilities and fields) and 289 acres for Passive Open Space (large landscaped spaces). Of the 1,026 acres on the campus, approximately 29 percent are planned as active and passive open space. Many of these areas on the campus, including trails and bicycle paths, would also be available to the general population of the surrounding area. The proposed Project would provide outdoor gathering spaces protected from wind, oriented towards the sun, and shaded for users. The proposed Project would also incorporate pedestrian and bicycle connectivity through the development of paths that would connect to the rest of the UC Merced campus. The 2020 LRDP SEIR analyzed and disclosed the physical impacts on the environment from the development of the 2020 LRDP, including the recreational facilities that may be developed on the campus under the plan. The proposed Project would not include recreational facilities or require the construction or expansion of recreational

facilities that may have an impact on the environment. Impacts would be **less than significant**, and no additional analysis is required in the Project EIR.

5.18.2 Cumulative Impacts

The 2020 LRDP SEIR found that past, present, and reasonably foreseeable development in eastern Merced County, including the UC Merced campus under the 2020 LRDP, would result in a cumulative impact associated with the deterioration of facilities at Lake Yosemite Regional Park. However, the contribution of the campus development under the 2020 LRDP to the degradation of Lake Yosemite Regional Park would not be cumulatively considerable due to the implementation of adequate mitigation, which would be applicable to all campus development (see **2020 LRDP Mitigation Measures PUB-6a** through **PUB-6c** below). There have been no changes in circumstances or new information since the certification of the 2020 LRDP SEIR that would alter the conclusions of the previous analysis. The proposed Project is within the area and scope of the previous analysis and would also implement these mitigation measures to avoid significant impacts on Lake Yosemite Regional Park. The cumulative impacts associated with the proposed Project are adequately addressed in the 2020 LRDP SEIR. Further analysis in the Project EIR is not required. No additional analysis of cumulative recreation impacts is required in the Project EIR.

5.18.3 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

Section 5.17.3 of this Initial Study discloses that **2020 LRDP Mitigation Measures PUB-6a** through **PUB-6c** would be applicable to the proposed Project.

5.18.4 Project Specific Mitigation Measures Not included in the 2020 LRDP SEIR

As the Project would not result in any new or more severe impacts to recreation resources than the impacts that were previously analyzed and disclosed in the 2020 LRDP SEIR, no Project-specific mitigation measures are required.

5.19 TRANSPORTATION

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.19.1 Impact Analysis

- a. *Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*
- b. *Would the project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?*

The 2020 LRDP SEIR analyzed potential impacts of traffic generated by campus growth on roadway facilities based on an analysis of level of service (LOS) impacts at 19 intersections under Year 2030 No 2020 LRDP Conditions and Year 2030 with 2020 LRDP Conditions. The 2020 LRDP SEIR concluded that nine intersections would be significantly affected by the traffic added under the 2020 LRDP, and **2020 LRDP Mitigation Measure TRANS-1** was adopted to reduce impacts at these intersections to a less-than-significant level. However, since the certification of the 2020 LRDP SEIR in March 2020, CEQA documents (as of July 1, 2020) must evaluate transportation impacts based on vehicle miles traveled (VMT), consistent with Senate Bill 743. As specified by SB 743 and the associated updates to the CEQA Guidelines, automobile delay, as measured by “level of service” and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA (Public Resources Code, Section 21099, subd. (b)(3)). Therefore, the EIR will include an updated supplemental program-level transportation impact analysis of campus growth through 2030 under the 2020 LRDP based on a VMT metric consistent with CEQA Guidelines Section 15064.3, subdivision (b). The program-level VMT analysis will account for the transportation impacts of the proposed Project.

With respect to impacts on transit service, similar to the 2020 LRDP, the proposed Project does not include any changes to transit service or infrastructure provided by non-University operators. UC Merced will continue to make improvements to CatTracks to serve the enrolled students, faculty and staff (including those of the proposed Project) and will continue to work with transit providers to coordinate service with the campus-provided service. Consistent with the analysis in the 2020 LRDP SEIR, the proposed Project’s impact on transit facilities would be **less than significant**.

With respect to pedestrian and bicycle facilities, the 2020 LRDP and the proposed Project do not include any infrastructure changes outside the campus and, thus, would not disrupt existing facilities, interfere with existing or planned pedestrian and bicycle facilities, nor conflict with adopted plans. The proposed Project would include connectivity to the existing pedestrian and

bicycle facilities of the UC Merced campus. Consistent with the analysis in the 2020 LRDP SEIR, the proposed Project's impact on pedestrian and bicycle facilities would be **less than significant**.

Overall, the proposed Project would not conflict with a program, plan, ordinance, or policy related to transit or bicycle and pedestrian facilities. Therefore, **no impact** would occur with respect to these topics and no additional analysis is required in the Project EIR. As described above, the potential for the Project to conflict with a program, plan, ordinance, or policy related to roadway facilities or conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b) will be evaluated in the Project EIR.

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The proposed Project would include development of the proposed HBS-ME Building and improvements to the existing storm water detention basins within Cottonwood Meadow. Implementation of the proposed Project would not include changes to off-campus roadways; as such, the proposed Project would not increase hazards due to a geometric design feature of roadways or intersections. The proposed HBS-ME Building would be developed on the campus in an area designated as CMU and therefore would be consistent with other types of structures and uses that exist in the same area of the campus or that would be developed in the future under the 2020 LRDP. Bellevue Road and Cottonwood Loop Road would provide access to the proposed Project once it is completed and operational. Overall, the proposed would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). **No impact** would occur, and no additional analysis is required in the Project EIR.

d. Would the project result in inadequate emergency access?

As described in the 2020 LRDP SEIR, all transportation facilities, including connections to off-campus facilities and the proposed Project site, would be constructed according to State of California design standards for roadway and intersection design and operations. Bellevue Road and Cottonwood Loop Road would provide access to the proposed Project once it is completed and operational. Both Bellevue Road and Cottonwood Meadow Loop Road have been designed to accommodate emergency vehicles travel; as such, adequate emergency access to the Project site would be provided. For these reasons, implementation of the proposed Project would not result in inadequate emergency access. Impacts would be **less than significant**, and no additional analysis is required in the Project EIR.

5.19.2 Cumulative Impacts

As the proposed Project would not include improvements to off-campus transit, pedestrian or bicycle facilities, or contribute to a cumulative increase in the use of these facilities such that they would exceed service capacity or conflict with applicable service policies, the proposed Project would not cumulatively contribute to impacts to such facilities. Further evaluation of cumulative impacts to these facilities in the Project EIR is not required.

As the program-level VMT analysis in the EIR will account for campus growth through 2030, including the proposed HBS-ME Building, any cumulative impacts associated with the proposed Project will be addressed as part of the program-level analysis. Thus, the potential for cumulative VMT impacts from the proposed Project under the 2020 LRDP will be addressed in the Project EIR.

5.19.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

Transportation-related mitigation measures from the 2020 LRDP SEIR are no longer applicable to new development on the campus, including the proposed Project. This is because those mitigation measures were adopted to address level of service impacts of traffic associated with campus growth. As stated above, CEQA now requires that consistent with SB 743, transportation impacts be evaluated based on VMT. The Project EIR will include an updated supplemental program-level VMT analysis of campus growth through 2030 under the 2020 LRDP, and if a significant transportation impact is identified, mitigation measures will be set forth in the Project EIR.

5.19.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

A VMT analysis will be conducted in the Project EIR and mitigation measures may be required to reduce identified impacts. Such mitigation, if required, will be identified in the Project EIR.

5.20 TRIBAL CULTURAL RESOURCES

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code 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 that is:		
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

5.20.1 Impact Analysis

- a. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code 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 that is:*
- i. *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or*
 - ii. *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*

Assembly Bill (AB) 52, which came into effect on July 1, 2015, requires that lead agencies consider the effects of projects on tribal cultural resources and conduct notification and consultation with federally and non-federally recognized Native American tribes early in the environmental review process. The geographic area of the Project site (and UC Merced campus) is not known to contain tribal cultural resources. Nevertheless, UC Merced will offer local tribes an opportunity to consult with the campus regarding this project pursuant to AB 52. Consultation letters were sent on April 2, 2021 to Native American tribes with traditional lands or cultural places located within the region of the campus to determine if they wish to consult regarding the proposed Project. The results of this consultation will be included in the Project EIR.

5.20.2 Cumulative Impacts

Potential cumulative impacts to tribal cultural resources will be addressed in the Project EIR.

5.20.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The applicability of the **2020 LRDP Mitigation Measures CUL-2** and **CUL-3** to the proposed Project will be addressed in the Project EIR.

5.20.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

If Project level mitigation measures are required, those will be identified in the Project EIR.

5.21 UTILITIES AND SERVICE SYSTEMS

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
Would the project:		
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.21.1 Impact Analysis

- a. *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

The proposed HBS-ME Building would connect to existing utilities and infrastructure that currently serve the UC Merced campus. Discussions pertaining to water and wastewater are described below in **Sections 5.21.1.b** and **c**, respectively.

Storm water generated by the proposed Project would be conveyed into the storm water basins within Cottonwood Meadow. Runoff that accumulates in these basins is detained and then discharged into Cottonwood Creek. If excess water accumulates, it is discharged into storm water basins south of the Bellevue Road parking lot via a storm drain. Implementation of the proposed Project may increase storm water flows that would cause the system's capacity to be exceeded; as such, the proposed Project would include modifications to the storm water detention basins located within Cottonwood Meadow. These improvements have the potential to result in significant environmental effects; as such, this topic will be further discussed/analyzed in the Project EIR.

The 2020 LRDP SEIR discussed the use of electricity and natural gas and the need to update infrastructure to adequately serve the anticipated population of UC Merced up to 2030. Campus operation under the 2020 LRDP is anticipated to result in a net new demand of approximately 211 therms of natural gas and a net new electricity demand of 7.8 megawatts annually. All UC projects on the campus (including the proposed Project) are required to achieve a Silver rating under the United States Green Building Council's (USGBC) LEED Building Design and Construction (BD+C) v4.0 Green Building Rating System (the LEED Rating System). The UC Merced campus also has a 1.0 MW ground-mounted solar array and has installed roof-top solar panels on some of the residence halls

on the campus to provide 4.2 MW of power. In compliance with UC Sustainable Practice Policy, 100 percent of the power that will be needed by the campus at buildout under the 2020 LRDP will be obtained from a number of renewable and alternative technologies, including wind turbines, fuel cells, and photovoltaic systems. The proposed Project would account for an additional approximately 182,698 gsf of building space on the campus, which is well within the 1.83 million gsf increase evaluated in the 2020 LRDP SEIR. The anticipated population increase associated with the proposed HBS-ME Building Project (i.e., 2,999 students, faculty, and staff) is also within the projected 2020 to 2030 campus population increase that was analyzed in the 2020 LRDP SEIR (i.e., 6,431 students, faculty, and staff). As such, implementation of the proposed Project would not require additional electrical infrastructure beyond what is needed for buildout of the UC Merced campus under the 2020 LRDP. It should be noted that the proposed Project would not require natural gas aside from potential limited uses in research laboratories; as such, implementation of the proposed Project would not require additional natural gas conveyance infrastructure beyond what is needed for buildout of the UC Merced campus under the 2020 LRDP. Impacts would be **less than significant**. No additional analysis of this topic is required in the Project EIR.

The proposed Project would connect to the existing telecommunication utilities on the UC Merced campus and would not require additional infrastructure to be adequately supported. Impacts would be **less than significant**. No additional analysis of this topic is required in the Project EIR.

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

As discussed in the 2020 LRDP SEIR, the City of Merced provides potable water to the campus. The City's water supply is drawn from 20 active production wells with a combined capacity of 54,100 gallons per minute (gpm). All of the wells pump directly into the distribution system and have chlorination facilities for disinfection. The City provides potable water to the campus and the Project site via its distribution system. The water is primarily supplied by a 16-inch water line that was constructed within the roadway alignment of Bellevue Road. The City also produces potable water used to serve the campus from Well Number 17, which is located on the campus. Well Number 17 is a City-owned facility located on Campus land deeded to the City. Approximately 90 percent of the water from this well is supplied to the campus, with the remaining flow contributing to the City's distribution system. This well is capable of pumping 2,500 gpm. An on-campus distribution system delivers potable water to each building within the campus, as would be the case for the proposed HBS-ME Building. Irrigation water for the campus is also obtained from the City of Merced supply. In addition, UC Merced also owns a pump station and a large aboveground 250,000-gallon water storage tank near Well 17 that provides operational and emergency storage for the campus.

The campus receives potable water from the City of Merced pursuant to an extraterritorial urban services agreement. The agreement states that the City will serve a campus population of up to 10,000 FTE students. As reflected in the 2020 LRDP SEIR, the agreement would need to be updated to serve future campus growth under the 2020 LRDP. Implementation of the proposed Project would generate 2,811 students that would be added to the existing (as of 2020) 9,000-student population of the UC Merced campus; as such, the proposed Project would result in the campus population exceeding 10,000 FTE students, and the extraterritorial urban services agreement

between UC Merced and the City of Merced would need to be updated as a result of the proposed Project.

The 2020 LRDP SEIR determined that by 2030, the water demand for the UC Merced campus would be 612 AFY. As described in **Section 5.12** of this Initial Study, the City of Merced, in its 2015 UWMP, estimated and included a demand of 1,406 AFY of water for the campus in 2030. Thus, the total demand of the UC Merced campus under the 2020 LRDP is well below the 1,406 AFY of water per year accounted for in the approved 2015 UWMP. In addition, the 2015 UWMP concluded that the City of Merced has an adequate groundwater supply to meet water demands in its service area through 2035, including the UC Merced water demand under the 2020 LRDP, during normal, single-dry, and multi-dry years. As the proposed Project's additional campus population growth and building space are within the space and population increases projected for the campus under the 2020 LRDP, the proposed Project has been accounted for in the 2020 LRDP water demand. Therefore, there would be sufficient water supplies available to adequately serve the Project during normal, dry and multiple dry periods. Furthermore, potable water would be supplied via Well Number 17, which is located on the campus, and the existing on-campus distribution system would be adequate to accommodate the proposed Project. As described above, UC Merced would negotiate an updated extraterritorial urban services agreement with the City of Merced since the proposed Project would result in the UC Merced campus exceeding a student population of 10,000 FTE students. Therefore, impacts would be **less than significant**. No additional analysis of this topic is required in the Project EIR.

c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The 2020 LRDP SEIR evaluated the amount of wastewater that would be generated due to campus buildout through 2030. The proposed Project would account for an additional approximately 182,698 gsf of building space on the campus, which is well within the 1.83 million gsf building space increase evaluated in the 2020 LRDP SEIR. The anticipated population increase associated with the proposed HBS-ME Building Project (i.e., 2,999 students, faculty, and staff) is also within the projected 2020 to 2030 campus population increase that was analyzed in the 2020 LRDP SEIR (i.e., 6,431 students, faculty, and staff). As such, the building size and population of the proposed Project has been accounted for in the 2020 LRDP and its wastewater treatment.

Similar to for potable water service, wastewater service is provided to the campus (including the Project site) by the City of Merced pursuant to an extraterritorial urban services agreement. The agreement states that the City will serve a campus population of up to 10,000 FTE students. As reflected in the 2020 LRDP SEIR, the agreement would need to be updated to serve future campus growth under the 2020 LRDP. Implementation of the proposed Project would generate 2,811 students that would be added to the existing (as of 2020) 9,000-student population of the UC Merced campus; as such, the proposed Project would result in the campus population exceeding 10,000 FTE students, and the extraterritorial urban services agreement between UC Merced and the City of Merced would need to be updated.

The 2020 LRDP SEIR determined that 0.27 million gallons per day (mgd) of wastewater would be generated (17,700 students/faculty/staff multiplied by 15.1 gallons per day per person) by 2030 under buildout of the 2020 LRDP. Of this total, the proposed Project is anticipated to generate 0.045 mgd (2,999 students/faculty/staff multiplied by 15.1 gallons per day per person) of wastewater, which would equate to 16.7 percent of the total wastewater generated by development of the campus under the 2020 LRDP.

The City's Wastewater Treatment Plant (WWTP) currently treats approximately 8.2 mgd of wastewater. As described in the 2020 LRDP SEIR, if the projected wastewater flows from the campus development (which includes the proposed Project) under the 2020 LRDP are added to the existing flows, the WWTP would be required to treat approximately 8.47 mgd. The City's WWTP currently has the capacity to treat up to 12 mgd and the City has approved the expansion of the capacity to 20 mgd. This WWTP expansion will be implemented to serve regional population growth with and without the campus. If it is assumed that there are no increases in flows to the WWTP from other sources, the existing WWTP would be adequate to serve the wastewater demands of the proposed Project. Even with increases in flows from other sources, there would be adequate capacity to serve the proposed Project and the UC Merced campus under the 2020 LRDP.

The 2020 LRDP SEIR indicated that an existing sewer line on G Street would not be adequate to handle the increased flows through 2030. For this reason, the installation of a new line or an upgrade to the existing line on G Street would be needed. The SEIR also noted that when appropriate and applicable, the improvements to the existing line on G Street would be made by the City, and pursuant to Government Code Section 54999, UC Merced will pay a limited capital facilities fee to the City to cover UC Merced's share of construction/improvement costs for the line on G Street. Implementation of the proposed Project has the potential to result in wastewater flows that could cause the capacity of the existing line on G Street to be exceeded, therefore requiring the line to be upgraded or a new line to be installed.

In summary, development of the proposed Project under the 2020 LRDP would not require construction of new or expanded wastewater treatment facilities; nor would the proposed Project result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the Project's projected demand in addition to existing commitments. However, the proposed Project has the potential to generate wastewater that would exceed the capacity of the existing line along G Street. Implementation of the proposed Project could therefore result in a **potentially significant impact** related to any necessary modifications to the G Street line serving the Project site. This topic will be further analyzed in the Project EIR.

- d. *Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*
- e. *Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

The 2020 LRDP SEIR evaluated the amount of solid waste that would be generated due to campus buildout through 2030 under the 2020 LRDP. As detailed above under previous responses, the estimated campus population increase and total building space associated with the proposed Project are within the growth assumptions used in the 2020 LRDP EIR analyses. As such, the building size and population of the proposed Project has been accounted for in the 2020 LRDP and its solid waste generation/disposal.

Based on data provided by UC Merced, during the 2017 to 2018 school year, with a student population of about 8,500 students, the campus generated about 680 tons of municipal solid waste. This equates to a rate of approximately 160 pounds per student per year. Of this solid waste, approximately 43 percent was recycled or otherwise diverted and about 57 percent was sent to the Merced County Highway 59 Landfill. With the development of the campus under the 2020 LRDP, the campus will accommodate 15,000 students, and assuming 160 pounds per student per year, campus generated solid waste would increase to 1,200 tons per year by 2030. The proposed Project would accommodate 2,811 students and therefore, assuming the same solid waste generation rate, Project generated solid waste would equate to 225 tons per year. This equates to 18.8 percent of the total solid waste estimated to be generated by the UC Merced campus under the 2020 LRDP by 2030.

It is anticipated that capacity at the Highway 59 Landfill will be reached in approximately 2065. While full development of the campus and the proposed Project would generate more solid waste than existing conditions, it is anticipated that eventually very little solid waste would be disposed of in a landfill in the future. However, in the interim, based on the existing diversion rate of approximately 43 percent, the campus (which includes the proposed Project) would dispose of about 516 tons of waste per year in the landfill by 2030. This is about 0.11 percent of the permitted annual amount of waste that can be accepted at Highway 59 Landfill, which can accept up to 459,000 tons per year. As the campus (which includes the proposed Project) anticipates that 90 percent of solid waste would be diverted from the landfill in the future, the amount disposed at the landfill annually would be even lower. As there is adequate capacity available in the landfill, an expansion of the landfill would not be required. Implementation of the proposed Project would not generate solid waste in excessive of state or local standards, or in excess of the capacity of the Highway 59 Landfill. Impacts would be **less than significant**, and no additional analysis of this topic is required in the Project EIR.

5.21.2 Cumulative Impacts

Potential cumulative impacts to storm water drainage will be addressed in the Project EIR.

Development of the UC Merced campus under the 2020 LRDP, development of related projects, and development of the proposed Project would cumulatively contribute to demand associated with

utilities and service systems (i.e., wastewater, water, electricity, natural gas, solid waste, and telecommunications). The discussion presented above indicated that the 182,698 gsf HBS-ME Building and the anticipated population increase of the Project (i.e., 2,999 students, faculty, and staff) have been accounted for in the 2020 LRDP building development and population increase on the UC Merced campus up to 2030. Since the 2020 LRDP was determined to not result in significant cumulative impacts on utilities and service systems, it is appropriate to conclude that the proposed Project's contribution to cumulative impacts associated with utilities and service systems would also not be considerable, i.e., would be **less than significant**. Further analysis of cumulative impacts associated with these utilities and service systems in the Project EIR is not required.

5.21.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The 2020 LRDP SEIR did not require mitigation measures under this resource topic as no potentially significant impacts associated with utilities and service systems were identified.

5.21.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

Water and wastewater service analysis will be conducted in the Project EIR and impact conclusions may require mitigation measures to reduce the level of impact. Such mitigation, if required, will be identified in the Project EIR.

5.22 WILDFIRE

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:		
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

According to the California Department of Forest and Fire Protection (CalFire), the campus including the Project site is not located in a State Responsibility Area (SRA) or Local Responsibility Area (LRA) Very High Fire Hazard Severity Zone (VHFHSZ).³⁰ CalFire has a legal responsibility to provide fire protection on all SRA lands, which are defined based on land ownership, population density and land use. Local cities and jurisdictions are responsible for fire protection on all land designated as LRAs. An SRA Moderate Fire Hazard Severity Zone is designated adjacent to the northeast boundary of the campus within the CNR conservation lands.³¹

5.22.1 Impact Analysis

a. *Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

UC Merced has adopted both an Emergency Operations Plan and a Crisis Communications Plan. The Campus emergency response team is trained and equipped to respond to campus emergencies including fires. UC Merced provides sufficient resources to respond to campus emergencies, in coordination with the County of Merced, if necessary. In addition, UC Merced would prepare (or update) safety planning documents in accordance with California Health and Safety Code Section 25517.5, as well as applicable laws, regulations, and Campus policies. The Campus would implement safety training programs upon occupying a new campus building to ensure efficient implementation of any emergency response plan. In addition, each department in the new building would be responsible for preparing and implementing its own emergency action plan. These plans would contain detailed procedures for building occupants to follow in the event of various emergencies and evacuations. The new building associated with the proposed Project would be assigned a

³⁰ CalFire, Fire and Resource Assessment Program, California Fire Hazard Severity Zone Viewer, Website: <https://gis.data.ca.gov/datasets/789d5286736248f69c4515c04f58f414>. Accessed January 15, 2021.

³¹ CalFire, Fire and Resource Assessment Program, California Fire Hazard Severity Zone Viewer, Website: <https://gis.data.ca.gov/datasets/789d5286736248f69c4515c04f58f414>. Accessed January 15, 2021.

building safety coordinator who would address emergency planning and safety training for the occupants, employees, staff, and students. According to the 2020 LRDP SEIR, development of the campus, including the proposed Project, would not impair implementation of or physically interfere with any emergency response plan or emergency evacuation plan, and this impact is considered **less than significant**. Further analysis in the Project EIR is not required.

- b. Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

As disclosed above, the UC Merced campus is not located in a designated SRA or LRA VHFHSZ. The proposed Project is located on the southeast side of the campus and is located on land that is relatively flat. As the UC Merced campus is located on the floor of the Central Valley, smoke from nearby fires has the potential to accumulate in the valley dependent on the wind pattern and inversion layer associated with local weather events. The proposed Project would be under and would comply with the Emergency Operations Plan and Crisis Communications Plan of UC Merced. The departments occupying the new building associated with the proposed Project would prepare and implement an individual emergency response plan that would provide evacuation procedures in the event of a fire or wildfire in the area. The new building associated with the proposed Project would be assigned a building safety coordinator who would address emergency planning and safety training for the occupants, employees, staff, and students. Finally, the proposed Project would be designed to comply with the most current California Fire Code requirements and would include such features as fire sprinkler systems. Implementation of the proposed Project would not exacerbate wildfire risks and thereby would not expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts would be **less than significant**. Further analysis in the Project EIR is not required.

- c. Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

The proposed Project includes the development of the proposed HBS-ME Building and improvements to the storm water detention basins within Cottonwood Meadow. The proposed Project would not include the development of new roads, fuel breaks, emergency water sources power lines or other utilities that may exacerbate fire risk. The proposed HBS-ME Building would connect to existing utilities that serve the UC Merced campus. The proposed Project would also be designed to incorporate fire protection features such as a sprinkler system, fire extinguisher stations throughout the building, fire alarm system, and fire-rated construction materials. Overall, impacts would be **less than significant**, and no further analysis is required in the Project EIR.

- d. Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

The Project site, similar to the majority of the UC Merced campus, is located on relatively flat land. The foothills of the Sierra Nevada Mountain range are located approximately 9.5 miles east of the

Project site (the nearest sloped topography to UC Merced and the Project site); as such, the Project site has a low susceptibility to downslope or downstream flooding or landslides as a result of runoff or post-fire slope instability. The Project site will be located adjacent to and extend into Cottonwood Meadow, a feature on the UC Merced campus that is currently used for storm water detention. The 2020 LRDP SEIR indicates that the campus and Project site is not prone to flooding pursuant to the Federal Emergency Management Administration (FEMA) Flood Insurance Rate Map (FIRM). Overall, implementation of the proposed Project would not expose people or structure to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Impacts would be **less than significant**. Further analysis in the Project EIR is not required.

5.22.2 Cumulative Impacts

The proposed Project is not located within an SRA or LRA VHFHSZ and components of the proposed Project will incorporate fire suppression design techniques as applicable. The contribution of the proposed Project to wildfire cumulative impacts would not be cumulatively considerable. As a result, cumulative impacts associated with wildlife will not be further analyzed in the Project EIR.

5.22.3 2020 LRDP SEIR Mitigation Measures Applicable to the Proposed Project

The 2020 LRDP SEIR did not require mitigation measures under this resource topic as no potentially significant impacts associated with wildfire were identified.

5.22.4 Project-Specific Mitigation Measures Not Included in the 2020 LRDP SEIR

As the Project would not result in any new or more severe impacts pertaining to wildfires than the impacts that were previously analyzed and disclosed in the 2020 LRDP SEIR, no Project-specific mitigation measures are required.

5.23 MANDATORY FINDINGS OF SIGNIFICANCE

	Impacts to be Analyzed in the EIR	No Additional Analysis in the EIR Required
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

5.23.1 Impact Analysis

- a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

The proposed Project would not substantially affect fish or wildlife habitat, populations, communities or ranges (see **Section 5.6.1**) nor would it eliminate important examples of the major period of California history or prehistory (see **Section 5.7.1**). However, Native American consultation that would occur as part of the proposed Project may require project level analysis and mitigation measures to ensure that Tribal Cultural Resources of California are not impacted by the proposed Project. The impacts related to Tribal Cultural Resources will be evaluated in the Project EIR.

- b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

Cumulative impacts for each environmental factor are addressed throughout this Initial Study (**Sections 5.3 through 5.22**). The majority of cumulative impacts the proposed Project would contribute to would be reduced to a less-than-significant level; however, the Project's contribution to cumulative impacts under Air Quality, Hydrology and Water Quality (drainage patterns), Public Services (fire protection), Transportation (VMT), Tribal Cultural Resources, and Utilities and Service Systems (storm water and wastewater) could be considerable and result in significant cumulative impacts. These cumulative impacts will be evaluated in the Project EIR.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

As indicated in the discussion above, the proposed Project has the potential to result in significant impacts. The Project EIR will evaluate whether any of those impacts have the potential to result in substantial direct or indirect adverse effects on human beings.

6.0 LIST OF PREPARERS

6.1 LEAD AGENCY

University of California, Merced

Phillip Woods, Campus Architect and Director of Physical & Environmental Planning
Ana Becerril, Principal Planner
Francesca Cannizzo, Campus Biologist

University of California, Office of the President

Brian Harrington, Associate Director, Physical and Environmental Planning
Ha Ly, Planning Specialist

University of California, Office of the General Counsel

Anagha Dandekar Clifford, Senior Counsel

6.2 CEQA CONSULTANTS

Barati Consulting, LLC

Shabnam Barati, Ph.D., Principal in Charge/Project Manager

LSA

Theresa Wallace, Principal in Charge
Kristin Nurmela, Project Manager
Chris Graham, Senior Environmental Planner
Cara Carlucci, Senior Environmental Planner
Greg Gallagher, Geographic Information System (GIS) Specialist

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