UCM/MCCD "PROMISE" INTERSEGMENTAL STUDENT HOUSING PROJECT

Final Initial Study/Mitigated Negative Declaration

Prepared for
University of California, Merced

December 2024

ESA

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2600 Capitol Avenue
Suite 200
Sacramento, CA 95816

D202101223.01

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TABLE OF CONTENTS

UCM/MCCD "Promise" Intersegmental Student Housing Project IS/MND

Page

Appendices

List of Tables

List of Figures

CHAPTER 1
Introduction

UC Merced is part of the University of California (UC) system, a constitutionally created entity of the State of California with "full powers of organization and government" (California Constitution Article IX, Section 9). As a constitutionally created State entity, UC is not subject to the regulations of local agencies, such as those that may be found in the City of Merced General Plan or land use ordinances, whenever using property owned or controlled by UC in furtherance of UC's educational purposes.

This Final Initial Study/Mitigation Negative Declaration (Final IS/MND) addresses the environmental effects associated with the proposed UC Merced/Merced Community College District (UCM/MCCD) "Promise" Intersegmental Student Housing 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, a Mitigated Negative Declaration, or a Negative Declaration is required for a project. The State 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 purpose of this Initial Study is to evaluate the potential environmental impacts of the proposed Project to determine what level of environmental review is appropriate. As shown in the Determination in Section IV of this document and based on the analysis contained in this Initial Study, it has been determined that the proposed Project would not result in any significant impacts that cannot be mitigated to less than significant levels. The analysis contained in this Initial Study concludes that the proposed Project would result in the following categories of impacts, depending on the environmental resource involved: no impact; less than significant impact; or less than significant impact with the implementation of project-specific mitigation measures. Therefore, preparation of a Mitigated Negative Declaration is appropriate (the Mitigated Negative Declaration is presented in **Appendix A**).

Public and Agency Review

The Initial Study/Proposed Mitigated Negative Declaration was circulated for public and agency review from December 23, 2022 to January 23, 2023. Copies of the document were available for review at the UC Merced Kolligian Library and UC Merced Downtown Center. Comments on the Initial Study/Proposed Mitigated Negative Declaration were due by 5:00 PM on January 23, 2023 and could have been sent or emailed to:

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

During the comment period, comment letters were received from the following agencies:

- Letter 1: California Department of Toxic Substances Control (DTSC)
- Letter 2: Merced Irrigation District (MID)

Copies of the comment letters, and responses to comments that were raised in both letters are included in this Final Initial Study.

Revisions to the Final IS/MND

The Final IS/MND contains text revisions to the IS/MND that were made to reflect refinements in the Project design as a result of the proposals obtained through the design-build process. Specifically, the gross square footage has increased by 5,859 sf (4.7%) and assignable square footage has increased by 12,438 sf (14%). The maximum height of the building has increased to approximately 56 feet for a portion of the building to accommodate a pitched roof. The overall number of beds and occupants remains the same.

The Final IS/MND also contains text revisions to the IS/MND to reflect the annexation of the campus into the City of Merced in July 2024. It also contains text revisions to reflect an April 2024 update to the UC Sustainable Practices Policy, updated information to reflect the change in fire protection service due to annexation, and responses to comments received from DTSC and MID. None of these clarifications would result in physical changes to the Project or require changes to the impact analysis and conclusions in the IS/MND.

The text changes are shown <u>underlined</u> with the deleted/replaced text shown in ~~strikethrough~~.

CHAPTER 2
Project Information

Project Title:	UCM/MCCD "Promise" Intersegmental Student Housing Project
Lead Agency Name and Address:	University of California, Merced
Contact Person and Phone Number:	Phillip Woods, AICP Campus Architect and Director of Physical & Environmental Planning (209) 349-2561
Project Location:	~~Merced County~~ City of Merced
Project Sponsor's Name and Address:	University of California, Merced 5200 North Lake Road Merced, California 95343 Merced Community College District 3600 M Street Merced, California 95348

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CHAPTER 3
Project Description

Location

As shown in **Figure 1**, *Regional Location*, the project site is located on the University of California, Merced (UC Merced) campus~~, located approximately two miles northeast of the city of Merced.~~ On July 2024, UC Merced campus, along with a two-mile length of Bellevue Road right-of-way, was annexed into the City of Merced (City). The campus annexation area contains approximately 1,040 acres, while the public road right-of-way of Bellevue Road and the Lake Road frontage of the campus contains the balance of the approximate 1,139-acre annexation area.

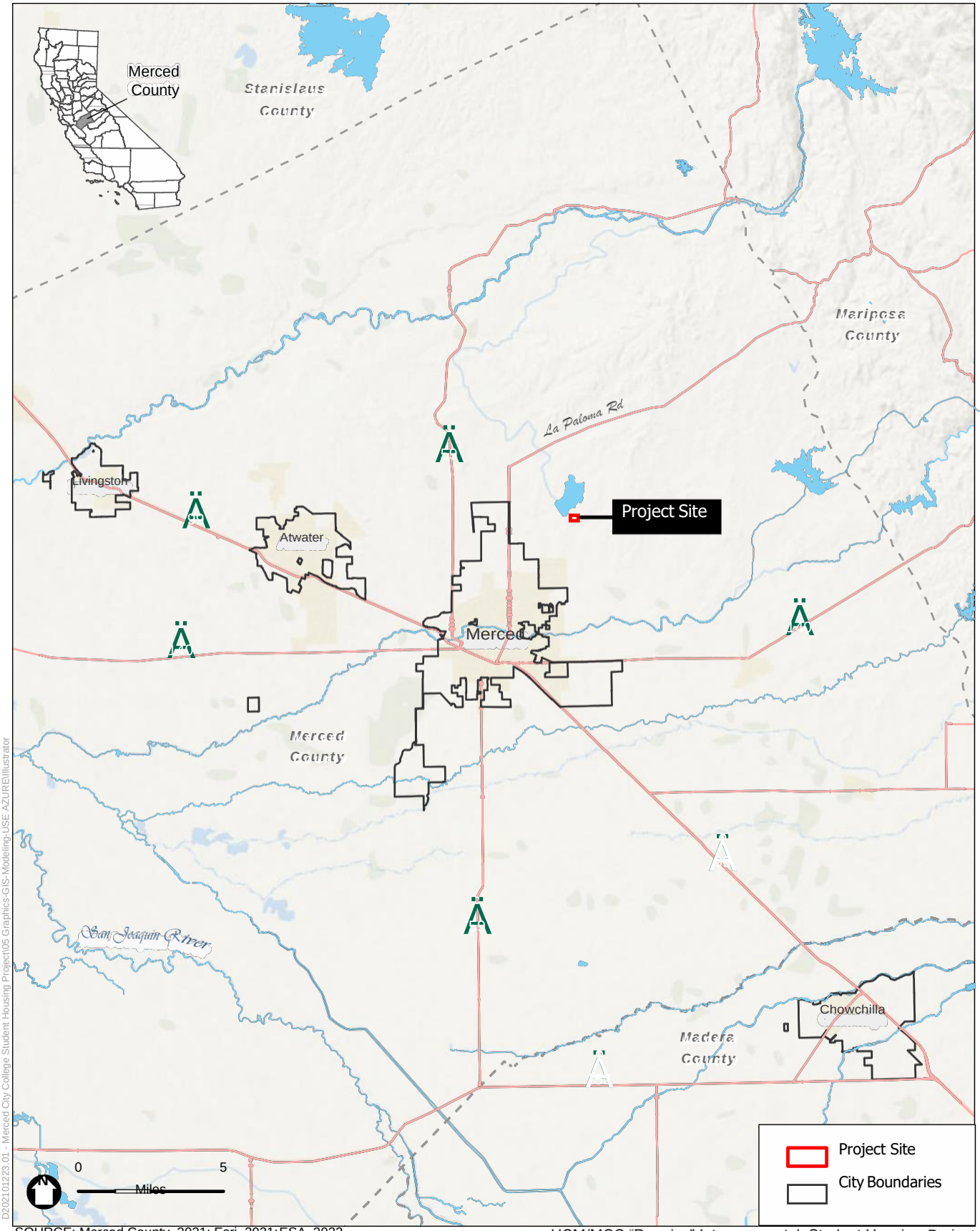
Regional access to the campus is provided by State Route 99 while local access to campus is provided by Lake and Bellevue Roads. As shown in **Figure 2**, *Project Site*, the approximately 4.7-acre project site is located on the southern portion of the campus and presently consists of a paved and graveled parking lot. The project site is bound by student housing to the north, temporary trailers to the east, a drainage basin and grasslands to the south, and a parking lot to the west. The approximately 1.8-acre construction staging area is located to the southeast of the project site south of the temporary trailers. The construction staging area currently consists of a gravel lot. Both the project site and the construction staging area are designated Campus Mixed Use (CMU) by the UC Merced 2020 Long Range Development Plan (LRDP).

Proposed Project

Building Program

UC Merced proposes the construction and operation of a student housing project on the UC Merced campus. The proposed project consists of affordable student housing building that would house existing and future students attending Merced College, located approximately three miles southwest of campus, as well as already matriculated UC Merced transfer students.[1] The University would design, permit, and construct the proposed project as well as own, operate and maintain the building while the Merced Community College District (MCCD) would own a stake in the interior improvements for the life of the project.

[1] Approximately 40 percent of residents would consist of existing and future Merced College students while about 60 percent of residents would consist of UC Merced transfer students.



SOURCE: Merced County, 2021; Esri, 2021; ESA, 2022

UCM/MCC "Promise" Intersegmental Student Housing Project

Figure 1
Regional Location

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SOURCE: Google Earth Pro, basemap, 2022; ESA, 2022

UCM/MCC "Promise" Intersegmental Student Housing Project

Figure 2
Project Site

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~~The proposed project consists of a single building, site improvements, and underground utility connections. The proposed building would be three to four stories in height (36-45 feet) and provide 124,372 gross square feet (gsf) and 91,094 assignable square feet (asf) of building space. The proposed building would include one two-bedroom apartment unit with two beds, 78 two-bedroom apartment units with four beds each, 24 two-bedroom double-occupancy apartments, 17 four-bedroom single-occupancy apartment units, nine studio apartments reserved for resident advisors with one bed each, and one apartment reserved for the resident director with one bed. Overall, the proposed project would include 130 apartment units providing a total of 488 beds; UC Merced and Merced College would each be allocated 50 percent of the beds.~~

The Project consists of a single building, site improvements, and underground utility connections. The proposed building would be three to four stories in height (36-56 feet). A portion of the building containing a pitched roof will be approximately 56 feet in height. The building will provide approximately 130,231 gross square feet (gsf) and approximately 103,532 assignable square feet (asf) of building space. The proposed building would include a mix of two-bedroom apartment units with two beds, two-bedroom apartment units with four beds, two-bedroom double occupancy apartments, four-bedroom single occupancy apartment units, nine studio apartments reserved for resident advisors with one bed each, and one apartment reserved for the resident director with one bed. Overall, the Project would provide a total of 488 beds. UC Merced and Merced College would each be allocated approximately 50 percent of the beds. The gross square footage has increased by 5,859 sf (4.7%) and assignable square footage has increased by 12,438 sf (14%) from what was included in the IS/MND to reflect refinements in the project design as a result of the proposals obtained through the design-build process. The maximum height for a portion of the building has increased to approximately 56 feet. The overall number of beds and occupants remains the same.

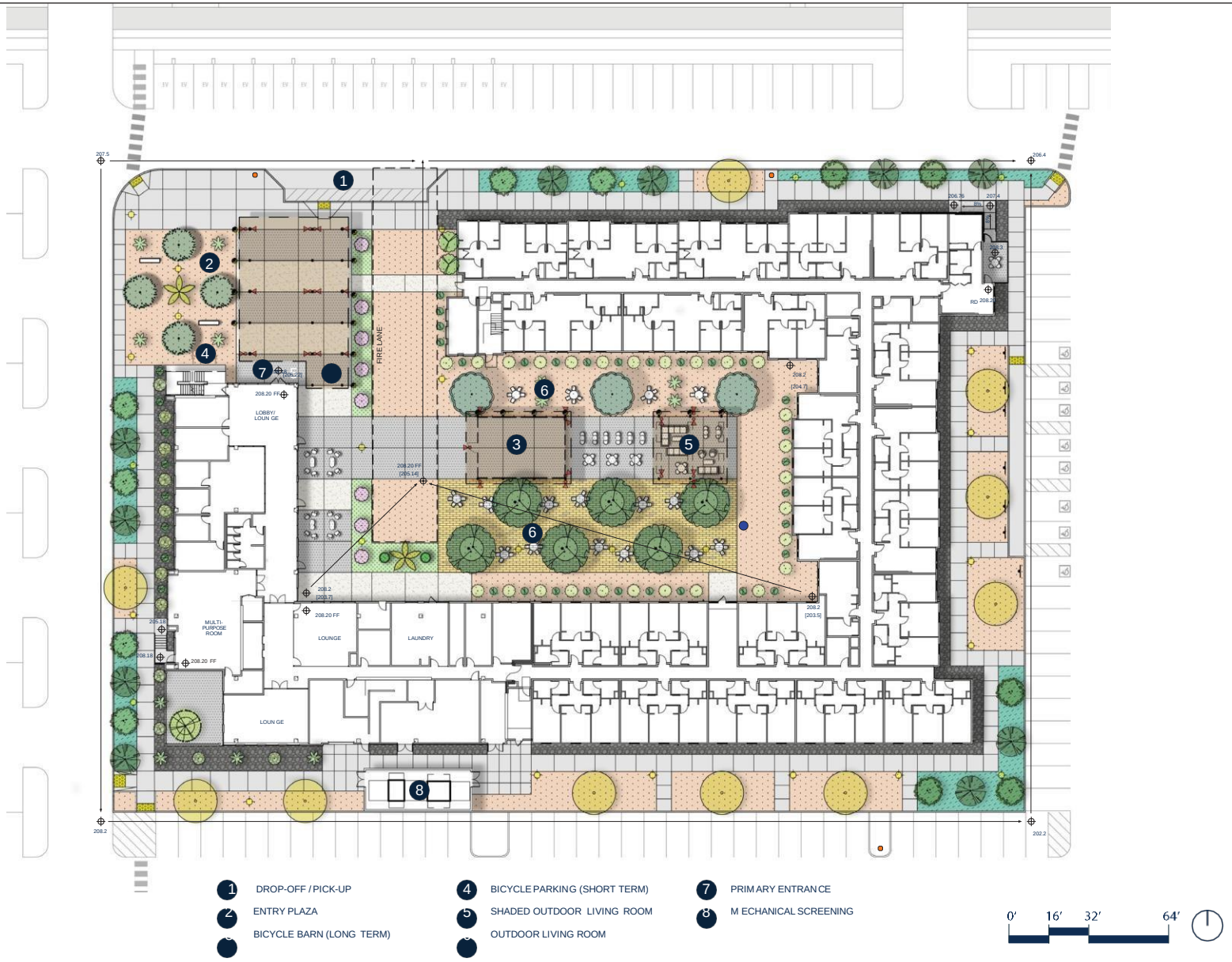
The proposed project is part of the Merced Promise Program, which was created to increase opportunities for low income, academically qualified Merced College students to complete their four-year degree and beyond at UC Merced.

The layout of the proposed project is provided in **Figure 3**, *Conceptual Site Plan*. The conceptual floor plan for the ground floor is provided in **Figure 4**, *Conceptual ~~Ground~~ Level 1 Floor Plan*, while the conceptual floor plans for the upper stories are provided in **Figure 5**, *Conceptual ~~2nd and 3rd~~ Level 2 & 3 Floor Plans*, and **Figure 6**, *Conceptual ~~4th~~ Level 4 Floor Plan*.

Amenities would include a student resource office, multipurpose room with adjacent storage, meeting rooms, a community kitchen, floor lounge/study area, and community laundry while building support space would include a front desk/main lobby/lounge area, building storage, a public restroom, shop/staff areas, and trash/recycling enclosure. Additional site features would include exterior lighting around the building exterior and landscaping.

Project Design

The project design will be guided by the campus Physical Design Framework which sets forth the general design and engineering principles to which the project design is required to comply. These standards establish both design and technical criteria that are classified into three categories: Requirements, Preferred Standards, and Prohibited Items. **Figure 7**, *Conceptual ~~North and South~~ Exterior Elevations*, ~~and **Figure 8**, *Conceptual West, East, and Courtyard West Elevations,*~~ illustrates the conceptual design of the proposed building.



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SOURCE: UC Merced, 2024

UCM/MCC "Promise" Intersegmental Student Housing Project

Figure 3
Conceptual Site Plan

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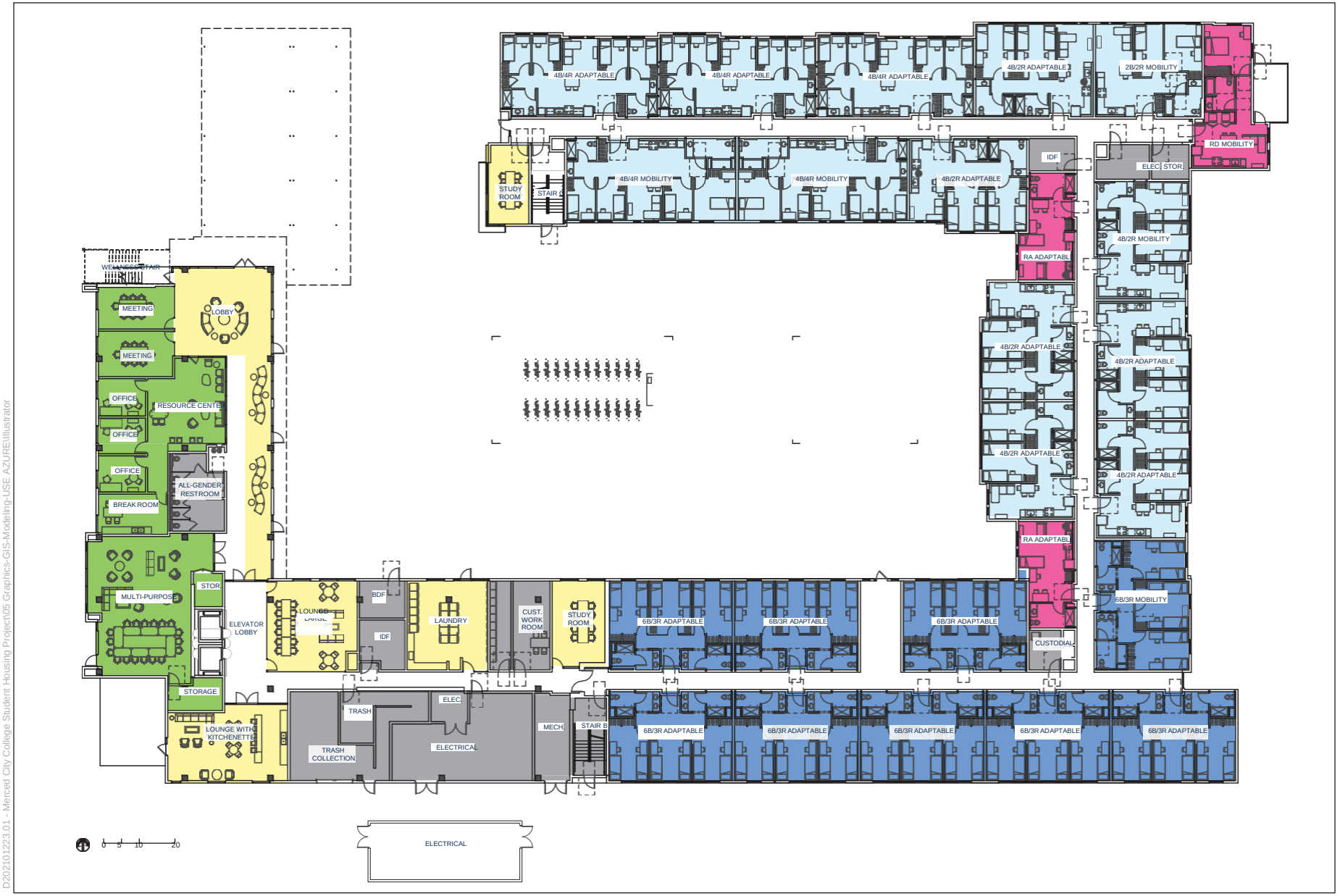

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SOURCE: UC Merced, 2024

UCM/MCC "Promise" Intersegmental Student Housing Project

Figure 4
Level 1 Floor Plan

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SOURCE: UC Merced, 2024

UCM/MCC "Promise" Intersegmental Student Housing Project

Figure 5
Level 2 & 3 Floor Plans

ESA

SOURCE: UC Merced, 2024

UCM/MCC "Promise" Intersegmental Student Housing Project

Figure 6
Level 4 Floor Plan

ESA

SOURCE: UC Merced, 2024

UCM/MCC "Promise" Intersegmental Student Housing Project

Figure 7
Exterior Elevations

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Access

Access would be provided from Bellevue Road, along the northern border of the project site. The proposed project would eliminate approximately 300 parking spaces on the project site. Parking for the proposed project would be provided by the remaining parking spaces on the project site as well as by existing parking spaces on an adjacent parking lot to the west.[2] The proposed project would also include bicycle locker spaces to encourage the use of bicycles. Public transportation would be available through the UC Merced shuttle system and the Merced County "Bus" system. The shuttle provides service to downtown Merced and Merced College and is accessible via the Campus Transit Center, located approximately 400 feet west/northwest of the project site north of Bellevue Road.

Utilities

The proposed building would be served by the campus utilities. All of the major utilities, including water, wastewater, electricity and telecommunications are available adjacent to the project site. Site storm water would be collected and discharged into the existing storm water basin to the south of the project site.

Sustainability

As the University would design, permit, and construct the proposed project as well as own, operate and maintain the building, the siting and design of the proposed project would be required to be consistent with the 2020 LRDP and the Physical Design Framework of the UC Merced campus. For the same reason, the proposed building would also be consistent with the University of California Policy on Sustainable Practices (UC Sustainable Practices 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 a fully electrified project. UC Merced will study whether a fully electrified housing building can be more energy efficient as a standalone building as opposed to tying 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 UC Sustainable Practices Policy or 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.

Construction

Project construction is anticipated to ~~occur over a 13-month period~~ begin~~ning~~ in spring ~~2024~~ 2025 and ending in ~~spring 2025~~ fall 2026, with occupancy commencing ~~in fall 2025~~ soon after.

[2] As the UC Merced campus has excess parking, the parking spaces eliminated by the proposed project will not be replaced.

Construction would take place Monday through Friday and would involve typical construction hours that extend from early morning through mid-afternoon.

Construction activities would include site grading and excavation, utility trenching, building foundation pouring, and building construction. Pile driving may be required. Typical construction equipment would include dozers, excavators, loaders/backhoes, paving equipment, forklifts, and haul trucks. Because the project would disturb more than one acre of land, the project would be required to obtain coverage under the State Water Resources Control Board Construction General Permit, which requires development and implementation of a stormwater pollution prevention plan (SWPPP). During project construction activities, SWPPP best management practices (i.e., erosion control, site stabilization, etc.) would be implemented at the site.

Project Need

Students attending community colleges in the Merced area, including Merced College, face an acute need for affordable housing. The proposed project would provide affordable housing for low-income qualifying community college students who have achieved the academic requirements of the "Merced Promise" program and made the personal commitment to complete their four-year education at UC Merced. "Merced Promise" is an MOU executed by UC Merced and MCCD in November 2020, binding the two institutions together to create a more robust educational pathway for the young people of the region from the associates to bachelor's degree to master's and doctoral degrees. Placing the proposed affordable housing project on the UC Merced campus would expose project residents to the UC system with the goal of encouraging them to transfer to UC Merced. To the extent that in the initial years there are still available beds after the "Merced Promise" students have been housed, UC Merced will fill the remaining beds with already matriculated UC Merced transfer students.

Relationship to the 2009 UC Merced and UCP EIS/EIR and 2020 LRDP EIR

In 2009, the University certified the UC Merced and University Community Project joint EIS/EIR (2009 LRDP EIS/EIR) (State Clearinghouse No. 2008041009) that analyzed the environmental impacts from the implementation of the UC Merced 2009 LRDP. That program EIR analyzed and disclosed the environmental impacts from developing an 815-acre campus site with facilities to serve an enrollment level of 25,000 students or a total population of 31,600 students, faculty, and staff by 2030. In 2020, UC Merced prepared an updated LRDP that encompassed a larger 1,026-acre campus site and projected a lower student population and prepared a Subsequent EIR (SEIR) that analyzed and disclosed the environmental impacts from developing the 1,026-acre campus site with facilities to serve a total on-campus population of 17,411 students, faculty, and staff by 2030. The 2020 LRDP is a comprehensive land use plan that guides physical development on the UC Merced campus to accommodate projected enrollment increases and expanded and new program initiatives. The UC Merced 2020 LRDP SEIR (State Clearinghouse No. 2018041010) was prepared in accordance with Section 15168 of the State CEQA Guidelines and Public Resources Code Section 21094 and provides a programmatic analysis of the likely environmental impacts that could result from the implementation of the 2020 LRDP. The 2020 LRDP SEIR

analyzes the impacts from full implementation of land uses and physical development anticipated under the 2020 LRDP and identifies measures to mitigate the significant adverse program-level and cumulative impacts associated with that growth and development. Both the 2009 and 2020 LRDP EIRs serve as Tier 1 program documents that the Campus uses in its environmental review of subsequent projects under the provisions of CEQA.

The proposed project was not contemplated at the time the 2020 LRDP was approved. Therefore, the Campus cannot use the tiering provisions under CEQA to tier this project's impact analysis from the two Tier 1 EIRs. However, both the 2009 LRDP EIS/EIR and the 2020 LRDP SEIR are incorporated by reference and used in this Initial Study to characterize the existing conditions on the campus and to analyze cumulative impacts of the proposed project.

Project Approvals

As a public agency principally responsible for approving or carrying out the proposed project, the University of California is the Lead Agency under CEQA and is responsible for reviewing and certifying the adequacy of the environmental document and authorizing an ownership agreement between the University and the MCCD for the MCCD's stake in the proposed building's interior improvements as well as the design and construction of the proposed project. The University of California Board of Regents (The Regents) or the UC Merced Chancellor (with approval authority delegated by The Regents) will consider this Mitigated Negative Declaration (MND) for adoption, and if the MND is adopted, will make a decision to ~~approve the ownership agreement between the University and the MCCD~~ approve the project. The consideration of the proposed project for approval by the decision makers is anticipated to occur in ~~Spring 2023~~ January 2025. The MCCD Board of Trustees may also consider the MND in its decision to approve the ownership agreement between the University and MCCD. ~~Consideration and approval of the ownership agreement by the Board of Trustees is also anticipated to occur in Spring 2023.~~ Finally, as the proposed project would disturb more than one acre of land, coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction Activity would be required. No other permits or approvals are required for the proposed project.

~~Please note that implementation of the proposed project is entirely dependent on the University receiving a California College Promise Grant for student housing, as authorized by Senate Bill 169, which is not a project approval. The University's grant applicant will be reviewed and determined in March 2023. If the University does not obtain the grant at this time, the proposed project is not expected to move forward.~~

CHAPTER 4
Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

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CHAPTER 5
Determination

On the basis of this initial study:

☐ The University finds that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ The University finds 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.

☐ The University finds that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ The University finds 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.

☐ The University finds 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 EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Phillip Woods
Campus Architect and
Director of Physical and Environmental Planning

Date

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CHAPTER 6
Evaluation of Environmental Impacts

During the completion of the environmental evaluation, the Campus relied on the following categories of impacts, noted as column headings in the IS checklist. All impact determinations are explained and supported by the information sources cited.

A) "Potentially Significant Impact" is appropriate if there is substantial evidence that the project's effect may be significant. If there are one or more "Potentially Significant Impacts" for which effective mitigation may not be possible, a Project EIR will be prepared.

B) "Less Than Significant With Mitigation Incorporated" applies where the incorporation of project-specific mitigation would reduce an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." All mitigation measures must be described, including a brief explanation of how the measures would reduce the effect to a less than significant level.

C) "Less Than Significant Impact" applies where the project would not result in a significant effect (i.e., the project impact would be less than significant without the need to incorporate mitigation measures).

D) "No Impact" applies where the project would not result in any impact in the category or the category does not apply. This may be because the impact category does not apply to the proposed project (for instance, the project site is not within a surface fault rupture hazard zone), or because of other project-specific factors.

Aesthetics

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
I.	**AESTHETICS —** Except as provided in Public Resources Code Section 21099, would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c)	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 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?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

Environmental Setting

Existing Conditions

The UC Merced campus consists of three existing land uses: the developed campus, grasslands used for seasonal grazing, and areas under irrigated pasture. The developed campus comprises academic buildings, student housing structures, a recreational field, a central utilities plant and related structures, a water well and storage tank, and a number of paved or gravel parking lots. The existing buildings on campus are two to six stories high and have exterior earth tone colors, such as brown, beige, dark orange, and gray. Larger structures on site are accented with decorative metal siding and large windows, and landscaping is present throughout campus (UC Merced 2009).

Lake Yosemite Regional Park is located to the northwest of the UC Merced campus, and lands to the north and east of the campus are occupied by rolling grasslands. South of the UC Merced campus, lands are under agricultural production (orchards), and to the west of the campus, lands consist of rolling grasslands interspersed with rural residential uses.

Scenic Vistas and Corridors

The Merced County General Plan considers major scenic vistas to be views of the Coastal and Sierra mountain ranges (UC Merced 2009). The Coastal mountain ranges are not visible from the project site, but the Sierra Nevada range to the east of the campus can be viewed from nearly all locations on the campus, including the project site, because the surrounding area is generally undeveloped. The Merced Vision 2030 General Plan designates the portion of Lake Road from Yosemite Avenue to Lake Yosemite Regional Park as a scenic corridor (UC Merced 2009). No other County- or City-designated scenic corridors are located in the project area.

Impact Discussion

a) 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. The proposed project would be developed on a portion of the campus that is designated CMU. The proposed structure would be located near the existing academic core and would be similar in height and scale to other development in the southern portion of the campus, where building heights range between approximately 45 and 65 feet in height. The proposed structure would be a four-story building that would be ~~about 45~~ approximately 56 feet in height and would not be taller than any of the other surrounding buildings in this portion of the campus. The proposed project would also not include aboveground infrastructure that would require screening. For these reasons, development of the proposed project would not have a substantial adverse effect on a scenic vista, and this impact would be less than significant.

b) The UC Merced campus, including the project site, is not located adjacent to a state scenic highway (Caltrans 2022) and does not contain scenic resources such as unique trees, rocky outcrops, or historic buildings. The mass and height of the proposed structure would be the same scale as existing development on campus, and thus would not adversely affect public views of the campus from Lake Road. For these reasons, there would be no impact regarding this criterion.

c) Construction of the proposed project would alter the visual character of the project site by placing a four-story building on a site that is currently a parking lot. The proposed project is located on a developed portion of the UC Merced campus, and the visual character of the campus surrounding the project site includes student housing and academic buildings to the north, portable office trailers to the east, a detention basin and undeveloped campus lands to the south, and parking lots to the west. The height and mass of the proposed structure would be consistent with the height and mass of the existing structures in the surrounding area such as the El Portal and Sentinel Rock student housing buildings. Furthermore, the proposed structure would be designed to be consistent with design guidance in the campus Physical Design Framework. The architectural design of the proposed structure 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 proposed structure would create a visual connection with strong building lines, complementary forms, and careful arrangement of building massing. For these reasons, the proposed project would not substantially degrade the existing visual character or quality of public views of the project site and UC Merced campus, and this impact would be less than significant.

d) New permanent sources of lighting would be established on the project site with the development of the proposed project that would increase the level of light on the site from current levels. The exterior lighting proposed would be limited to the amount required to safely illuminate the entrance, sidewalks, and other pedestrian areas within the project site. The interior lighting associated with the proposed project would be

similar to that emitted by other student housing in the area. For these reasons, the new lighting established on the site would not result in substantial increases in light that would affect any light sensitive uses on or near the site. The proposed project would also not include any reflective glass, thus would not result in any glare impacts on nearby pedestrians or autos. Therefore, 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, and this impact would be less than significant.

Cumulative Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of campus on the VST property. To accommodate planned growth on campus, UC Merced plans to add up to 1.83 million gross square feet of building space on campus between 2020 and 2030 (UC Merced 2020). The proposed University Vista project would include 5,576 dwelling units and approximately 1.8 million square feet of non-residential development (City of Merced 2022) while the Virginia Smith Trust Specific Plan project would include 3,917 dwelling units and about 845,000 gross square feet of non-residential development (Merced County 2022). Development on the UC Merced campus would consist of campus buildings and residence halls while development to the west and south of the campus would consist of planned communities with a mix of residential, commercial, office/business, park, and recreational sites. The height of new structures on the campus could be as high as six stories (UC Merced 2009), and while the heights of structures on neighboring properties are unknown, they would likely be comparable to the height of structures on the campus.

Given the amount of development proposed, anticipated future development on and adjacent to the UC Merced campus would dramatically change views and the visual character on and in the vicinity of the campus. Open views of rolling grassland would be replaced by views of denser urban development. Cumulative development could block views of the distant Sierra Nevada Mountains to the east. Furthermore, given that the area surrounding the campus is largely undeveloped, and does not contain sources of lighting, building lighting associated with cumulative development would substantially increase light and glare in the area. For these reasons, the cumulative impact with respect to aesthetics would be significant.

The contribution of development on campus to this cumulative impact was addressed in the 2009 LRDP EIS/EIR, which found that future development on the campus would result in significant and unavoidable impact with respect to aesthetics (UC Merced 2009). While the proposed project was not anticipated under the 2020 LRDP, it is located on a portion of the campus that has always been planned for development and would be similar to other campus development adjacent to the proposed building. Therefore, it would not increase the severity of previously analyzed aesthetic impacts of campus growth and development. The proposed project's cumulative impact with respect to aesthetics is adequately addressed in the 2009 LRDP EIS/EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2009 LRDP.

References

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Agriculture and Forestry Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
II. AGRICULTURE AND FORESTRY RESOURCES — 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 forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. 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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Setting

Existing Agricultural Uses

Agriculture is the predominant economic segment in Merced County and accounts for more than 90 percent of all land area. Merced County is ranked fifth among all counties in California and sixth in the nation in the annual market value of farm products. Rich soils, accessible irrigation water, favorable climate, a large labor force, and reliable access to local, national, and global markets make Merced County a thriving agricultural community (Merced County 2013).

Farmland Classification

The California Department of Conservation (CDOC), under the Division of Land Resource Protection, developed and implements the Farmland Mapping and Monitoring Program (FMMP) as a way to classify various types of farmland. Specifically, the FMMP produces maps and statistical data under the FMMP that are used for analyzing impacts to California's agricultural resources. FMMP maps are updated every two years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance. The FMMP rates agricultural land according to soil quality and irrigation status, with the best quality land labeled Prime Farmland. There are eight FMMP categories of agricultural lands, as listed here in order of

importance: (1) Prime Farmland, (2) Farmland of Statewide Importance, (3) Unique Farmland, (4) Farmland of Local Importance, (5) Grazing Land, (6) Urban and Built-up Land, (7) Other Land, and (8) Water. Prime Farmland, Farmland of Statewide Importance and Unique Farmland are considered Important Farmland under CEQA.

Though Merced County is primarily characterized by agricultural use, the project site is developed, and is therefore designated as Urban/Built-up Land on maps prepared pursuant to the FMMP (CDOC 2022).

Surrounding Farmlands

The areas directly adjacent to the north, east, and south of the UC Merced campus consist of grasslands utilized for periodic grazing and are thus designated as Grazing by the FMMP. The area located to the south of the campus consists of land utilized for agriculture and is designated as Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance by the FMMP (CDOC 2022).

Impact Discussion

a) The UC Merced campus core, including the project site and the construction staging area, is not currently used for agriculture, and is currently designated as Urban and Built-Up Land on maps prepared pursuant to the FMMP. As the project site and the construction staging area are not located with an area designated as Important Farmland, there would be no impact with respect to this criterion.

b) The portion of the UC Merced campus that includes the project site and construction staging area is zoned as ~~General Agricultural (A-1)~~ Public Facility by ~~Merced County~~ the City of Merced (~~Merced County, 2010;~~ City of Merced, 2024); however, as the campus and these sites are State owned, ~~County~~ City zoning does not apply. There are no parcels on the UC Merced campus that are under Williamson Act contract (Merced County GIS Information Portal 2022). For these reasons, there would be no impact with respect to this criterion.

c) As identified in Item (b), above, the project site and construction staging area are zoned ~~General Agricultural (A-1) by Merced County~~ Public Facility by the City of Merced. No portion of the project site or construction staging area is zoned forest land or timber land. There would be no impact with respect to this criterion.

d) No part of the UC Merced campus, including project site and the construction staging area, contains forest lands. Furthermore, the surrounding area does not include any forest land or timber land. There would be no impact with respect to this criterion.

e) Development of the project would occur in a developed portion of the UC Merced campus and there are no agricultural lands near the site. Therefore, development on the project site would not involve any changes that could directly or indirectly lead to the conversion of Important Farmland to non-agricultural use or conversion of forest land to non-forest use. The construction staging area would be used temporarily and would be in

an area where indirect effects on agricultural lands are not anticipated. There would be no impact with respect to this criterion.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

Most of the land on the UC Merced campus and the VST property is classified as grazing land while all the land on the site of the University Vista project is classified as grazing land. However, small portions of lands on campus and on the VST property are classified as Important Farmland, and development on these lands would result in the conversion of some Important Farmland to non-agricultural use. In addition, development of land on and in the vicinity of campus could place pressure on adjoining lands to convert to non-agricultural uses. As a result, the cumulative impact with respect to agricultural resources would be significant.

As discussed above, however, the project site is not located within an area designated as Important Farmland. In addition, ~~County~~ agricultural zoning does not apply to the project site and the site is not under a Williamson Act contract. Finally, the project site is located in a developed portion of the campus and is not located adjacent to agricultural lands, and thus future development on the site would not involve any changes that could directly or indirectly lead to the conversion of Important Farmland to non-agricultural use. For these reasons, the proposed project would not contribute to a cumulative impact on agricultural resources; there would be no impact.

References

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Air Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
III. AIR QUALITY — 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. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Environmental Setting

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, which affect air quality.

Criteria Pollutants

Criteria air pollutants are a group of six common air pollutants for which the U.S. Environmental Protection Agency (USEPA) has set ambient air quality standards. These pollutants include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter 10 microns or less in diameter (PM_{10}), particulate matter 2.5 microns or less in diameter ($PM_{2.5}$), and lead. Most of the criteria pollutants are emitted as primary pollutants. Ground-level ozone, however, is a secondary pollutant that is formed in the atmosphere by chemical reactions between oxides of nitrogen (NO_X) and reactive organic gases (ROG) in sunlight. In addition to the criteria air pollutants identified by USEPA, California adds four State criteria air pollutants: visibility-reducing particulates, sulfates, hydrogen sulfide, and vinyl chloride. Criteria pollutants of concern in the project area are discussed further below.

Ozone

Ozone (O_3) is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_x), including nitrogen dioxide (NO_2), and the presence of sunlight. ROG and NO_x are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours.

Ozone is a regional air pollutant because it is not emitted directly by sources but is formed downwind of sources of ROG and NO_x under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone.

Particulate Matter

Respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) represent fractions of particulate matter that can be inhaled into air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain absorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates can also damage materials and reduce visibility.

Toxic Air Contaminants

Toxic air contaminants (TACs) are airborne substances that can cause short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer-causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes nearly 200 compounds, including Diesel Particulate Matter (DPM) emissions from diesel-fueled engines (CARB 2011).

Valley Fever

Valley Fever (formally known as Coccidioidomycosis) is an infectious disease caused by the fungus *Coccidioides immitis*. Valley Fever is also known as San Joaquin Valley Fever, Desert Fever, or Cocci. Infection is caused by inhalation of *Coccidioides immitis* and *Coccidioides posadasii* spores that become airborne when dry, dusty soil or dirt is disturbed by natural processes such as wind or earthquakes, or by human induced ground disturbing activities such as construction and farming.

The California Department of Public Health (CDPH) received reports of 9,004 incident cases of Valley Fever for 2019, which was an 18 percent increase from 2018 (CDPH 2020). Approximately 60 percent of Valley Fever cases are mild and display flu-like symptoms or no symptoms at all. Coccidioidomycosis is highly endemic in the San Joaquin Valley and remains an important public health problem in California. There is currently no vaccine; however, efforts to develop a vaccine are ongoing (CDPH 2020). As a population with more than 10 cases per year of San Joaquin Valley Fever per 100,000 people, Merced County is considered “highly endemic” (CDIR 2017). In susceptible people and animals, infection occurs when a *Coccidioides immitis* spore is inhaled.

The Centers for Disease Control and Prevention (CDC) report that farm workers, construction workers, and others who engage in soil-disturbing activities are at risk for Valley Fever (CDC

2021a). High winds can carry dust and spores over long distances. Most people infected with Valley Fever have no symptoms, but if symptoms develop, they usually occur in the lung and initially resemble the flu or pneumonia (e.g., fatigue, cough, shortness of breath, chest pain, fever, rash, headache, and joint aches). Valley Fever is not contagious, and secondary infections are rare. On average, there were approximately 200 Valley Fever-associated deaths each year (deaths in which Valley Fever was listed as a primary or contributing cause on a death certificate) in the United States between 1999 and 2019 (CDC 2021a).

Existing Air Quality

The proposed project is located within Merced County, which is within the San Joaquin Valley Air Basin (SJVAB), the largest air basin in the state. The San Joaquin Valley Air Pollution Control District (SJVAPCD) is the government agency that regulates sources of air pollution within the county and the SJVAB. The SJVAPCD maintains a regional monitoring network that measures the ambient concentrations of criteria pollutants in the SJVAB. Ambient air quality measurements from air monitoring stations maintained by SJVAPCD help to determine the level of air quality in the local area. The closest air quality monitoring station to the project site is the Merced South Coffee Avenue station, approximately 8 miles south. **Table AQ-1** shows a 5-year (2017 through 2021) summary of ozone, $PM_{2.5}$, and NO_2 data monitored at the station. The data are compared to the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS), and the table shows the years and number of days in which the standards were exceeded.

Attainment Status

Air basins that exceed either the NAAQS or the CAAQS for any criteria pollutants are designated as "non-attainment areas" for that pollutant. To address non-attainment areas, California created the California State Implementation Plan (SIP), which is designed to provide control measures needed to attain ambient air quality standards. The SJVAPCD is the jurisdictional entity in the SJVAB that is responsible for implementing the SIP. The SJVAPCD developed regional air quality management plans to implement control measures to try to achieve attainment status for ozone, PM_{10}, and $PM_{2.5}$ (see *Regulatory Setting*, below). The attainment status for criteria pollutants within the SJVAB is shown in **Table AQ-2**, *San Joaquin Valley Attainment Status by Pollutant.*

Sensitive Receptors

Air quality does not affect individuals or groups within the population in the same way, as some groups are more sensitive to adverse health effects caused by exposure to air pollutants than others. Population subgroups sensitive to the health effects of air pollutants include the elderly and the young, those with higher rates of respiratory disease such as asthma and chronic obstructive pulmonary disease, and with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases.

TABLE AQ-1
AIR QUALITY DATA SUMMARY (2017-2021) FOR MERCED SOUTH COFFEE AVENUE STATION

Pollutant	Standard	Monitoring Data by Year				
		2017	2018	2019	2020	2021
Ozone						
Highest 1-Hour Average, ppm		0.093	0.104	0.087	0.100	0.099
Days over State Standard	0.09 ppm	0	4	0	2	2
Highest 8-Hour Average, ppm		0.084	0.083	0.076	0.087	0.089
Days over State/National Standards [a]	0.070 ppm	16	21	6	21	24
Fine Particulate Matter, $PM_{2.5}$						
Highest 24-Hour Average, µg/m^3		69.3	88.2	35.5	117.4	77.3
Measured days over National Standard Exceedances/Samples	35 µg/m^3	18	21	1	23	13
Annual Average, µg/m^3		13.2	15.1	9.1	14.7	11.2
Exceed State Average?	12 µg/m^3	Yes	Yes	No	Yes	No
Nitrogen Dioxide, NO_2						
Highest 1-Hour Average		0.039	0.046	0.039	0.039	0.038
Days over State Standard	0.18 ppm	0	0	0	0	0
Days over National Standard	0.100 ppm	0	0	0	0	0
State Annual Average		0.007	0.007	0.006	0.006	N/A
Exceed State Average?	0.030 ppm	No	No	No	No	N/A

NOTES:

Generally, state standards are not to be exceeded and national standards are not to be exceeded more than once per year. ppm = parts per million; µg/m^3 = micrograms per cubic meter; N/A = Not Available.

a. In October 2015, the USEPA implemented a new national 8-hour ozone standard of 70 ppb (or 0.070 ppm).

SOURCE: CARB, 2022.

TABLE AQ-2
SAN JOAQUIN VALLEY ATTAINMENT STATUS BY POLLUTANT

Pollutant	Federal	State
Ozone (one-hour standard)	No Federal Standard	Nonattainment/Severe
Ozone (eight-hour standard)	Nonattainment/Extreme	Nonattainment
Carbon Monoxide (CO)	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxides (NO_2)	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment
Fine Particulates ($PM_{2.5}$)	Nonattainment	Nonattainment
Inhalable Particulates (PM_{10})	Attainment	Nonattainment

SOURCE: CARB, 2019

Land uses such as schools, children's day care centers, hospitals, and nursing and convalescent homes are considered to be the most sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Parks and playgrounds are considered moderately sensitive to poor air quality because persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality; however, exposure times are generally far shorter in parks and playgrounds than in residential locations and schools, which typically reduces the overall health risk associated with exposure to pollutants. Residential areas are considered more sensitive to air quality conditions compared to commercial and industrial areas because people generally spend longer periods of time at their residences, with associated greater exposure to ambient air quality conditions. Workers are not considered sensitive receptors because all employers are required to follow regulations set forth by the Occupation Safety and Health Administration to ensure the health and well-being of their employees.

The closest off-site sensitive receptors are existing residences on the southwest side of Lake Road and the south side of Bellevue Road, which are as close as approximately 1,820 feet from the project site and 2,100 feet from the construction staging area. Additionally, the existing UC Merced El Portal Student Housing building located in the southern portion of the campus is approximately 100 feet from the project site and 600 feet from the construction staging area. However, students living in on-campus housing are not considered sensitive receptors relative to air quality due to the age and the short duration that they typically reside in student housing on a campus (UC Merced 2022).

Regulatory Setting

Air quality within the SJVAB is addressed through the efforts of various federal, state, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policymaking, education, and a variety of programs. The air pollutants of concern and agencies primarily responsible for improving the air quality within the SJVAB and the pertinent regulations are discussed below.

Criteria Air Pollutants

Regulation of air pollution is achieved through both CAAQS and NAAQS as well as emission limits for individual sources of air pollutants. As required by the federal Clean Air Act (CAA), the USEPA has identified criteria pollutants and has established NAAQS to protect public health and welfare. NAAQS have been established for ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

To protect human health and the environment, the USEPA has set "primary" and "secondary" maximum ambient thresholds for all seven criteria pollutants. Primary thresholds were set to protect human health, particularly sensitive receptors such as children, the elderly, and individuals suffering from chronic lung conditions, such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings.

As discussed previously, the NAAQS are defined as the maximum acceptable concentration that may be reached, but not exceeded more than once per year. California has adopted more stringent ambient air quality standards (i.e., CAAQS) for most of the criteria air pollutants. **Table AQ-3** presents both sets of ambient air quality standards (i.e., national and state) and provides the attainment status for each. California has also established state ambient air quality standards for sulfates, hydrogen sulfide, and vinyl chloride; however, air emissions of these pollutants are not expected under the proposed project and are not further discussed in this analysis.

TABLE AQ-3
NATIONAL AND STATE AMBIENT AIR QUALITY STANDARDS

Criteria Pollutant	Averaging Time	State Standard	Federal Primary Standard
Ozone	8 Hour	0.070 ppm	0.070 ppm
	1 Hour	0.09 ppm	---
Carbon Monoxide	8 Hour	9.0 ppm	9 ppm
	1 Hour	20 ppm	35 ppm
Nitrogen Dioxide	Annual Average	0.030 ppm	0.053 ppm
	1 Hour	0.18 ppm	0.100 ppm
Sulfur Dioxide	Annual Average	---	0.030 ppm
	24 Hour	0.04 ppm	0.14 ppm
	1 Hour	0.25 ppm	0.075 ppm
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 mg/m^3	---
	24 Hour	50 mg/m^3	150 mg/m^3
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 mg/m^3	12.0 mg/m^3
	24 Hour	---	35 mg/m^3
Lead	3-Month Rolling Average	---	0.15 mg/m^3
Hydrogen Sulfide	1 Hour	0.03 ppm/42 $\mu g/m^3$	---
Sulfates	24 Hour	25 mg/m^3	---
Vinyl Chloride	24 Hour	0.01 ppm/26 $\mu g/m^3$	---

NOTES:
ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; --- = no applicable standard

SOURCE: CARB, 2016

Federal

The USEPA is responsible for implementing programs established under the federal CAA, such as establishing and reviewing the NAAQS and judging the adequacy of SIPs but has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

State

The California Air Resources Board (CARB) is responsible for establishing and reviewing the state standards, compiling the California SIP and securing approval of that plan from the USEPA, conducting research and planning, and identifying TACs. CARB also regulates mobile sources of emissions in California, such as construction equipment, trucks, and automobiles, and oversees the activities of California's air quality districts, which are organized at the county or regional level. County or regional air quality management districts are primarily responsible for regulating stationary sources at industrial and commercial facilities within their geographic areas and for preparing the air quality plans that are required under the federal CAA and California CAA.

California's Diesel Risk Reduction Plan/Diesel Fuel Regulations

As part of California's Diesel Risk Reduction Plan, CARB has issued numerous regulations to reduce diesel emissions from vehicles and equipment that are already in use. Combining these retrofit regulations with new engine standards for diesel fueled vehicles and equipment, CARB intended to reduce DPM emissions by 85 percent from year 2000 levels by 2020. California Diesel Fuel Regulations (13 Cal. Code Regs. Sections 2281–2285; 17 Cal. Code Regs. Section 93114) provide standards for diesel motor vehicle fuel and non-vehicular diesel fuel.

CARB has also adopted a regulation for in-use off-road diesel vehicles that is designed to reduce emissions from diesel-powered construction and mining vehicles by imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles. The regulation requires an operator of applicable off-road vehicles (self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on-road) to limit idling to no more than 5 minutes.

Valley Fever

On October 11, 2019, Assembly Bill (AB) 203 was published to add Section 6709 to the Labor Code, relating to occupational safety and health. This bill requires construction employers engaging in specified work activities or vehicle operation in counties where Valley Fever is highly endemic, as defined, to provide effective awareness training on Valley Fever to all employees annually and before an employee begins work that is reasonably anticipated to cause substantial dust disturbance. The bill requires the training to cover specific topics and authorizes the training to be included in the employer's injury and illness prevention program training or as a standalone training program.

Local

San Joaquin Valley Air Pollution Control District

The project site is located within the jurisdiction of the SJVAPCD, which regulates air pollutant emissions for all sources throughout the SJVAB other than motor vehicles. The SJVAPCD administers permits governing stationary sources. In addition to administering permits, SJVAPCD enforces the following rules, regulations, and plans that would apply to the proposed project.

Regulation VIII (Fugitive PM10 Prohibitions)

Regulation VIII contains rules developed pursuant to USEPA guidance for serious PM_{10} non-attainment areas. Rule 8021 under this regulation limits fugitive dust PM_{10} emissions from the

following sources: construction, demolition, excavation, extraction, and other earth-moving activities, bulk materials handling, carryout and track-out, open areas, paved and unpaved roads, unpaved vehicle/equipment traffic areas, and agricultural sources. **Table AQ-4** contains requirements to which the proposed project would be subject to comply with Rule 8021. Additional control measures that must be implemented during project construction activities pursuant to Rule 8021 include use of water, barriers or use of chemical stabilizers sufficient to limit visible dust emissions to 20 percent opacity A dust control plan, which is required of projects of 10 acres or greater, would not be applicable to the proposed project (6.5 acres including staging area) and therefore, these elements are not included in Table AQ-4.

TABLE AQ-4
SJVAPCD RULE 8021 NON-ADMINISTRATIVE MEASURES AND NOTIFICATION REQUIREMENTS APPLICABLE TO THE PROJECT

No.	Measure
5.2	A person shall control the fugitive dust emissions to meet the requirements in [SJVAPCD] Table 8021-1
5.3.1	An owner/operator shall limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.
5.3.2	An owner/operator shall post speed limit signs that meet state and federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access/haul roads.
5.4.1	Cease outdoor construction, excavation, extraction, and other earthmoving activities that disturb the soil whenever visible dust emissions exceeds 20 percent opacity. Indoor activities such as electrical, plumbing, dry wall installation, painting, and any other activity that does not cause any disturbances to the soil are not subject to this requirement.
5.4.2	Continue operation of water trucks/devices when outdoor construction excavation, extraction, and other earthmoving activities cease, unless unsafe to do so.

SOURCE: SJVAPCD, 2004

Rule 9510 (Indirect Source Review)

Some projects are required to implement PM and NO_x reduction measures as required under SJVAPCD Rule 9510, Indirect Source Review (ISR), which was adopted by the SJVAPCD's Governing Board in 2005 to reduce the impacts of growth in emissions resulting from new land development in the SJVAPCD. SJVAPCD Rule 9510 applies to new development projects that would equal or exceed specific size limits called "applicability thresholds" (SJVAPCD 2017). The applicability thresholds were established at levels intended to capture projects that emit at least 2 tons of NO_x or 2 tons of PM_{10} per year.

Air Quality Management Plans

As required by the federal and California CAAs, air basins or portions thereof have been classified as either "attainment" or "non-attainment" for each criteria air pollutant, based on whether or not the standards have been achieved. Jurisdictions of non-attainment areas also are required to prepare an air quality management plan that includes strategies for achieving attainment. The SJVAPCD has approved the following air quality management plans demonstrating how the SJVAB will reach attainment with the federal and California standards.

Ozone Attainment Plans

On July 18, 2016, the USEPA published in the Federal Register the final action to determine that the SJVAB has attained the 1-hour ozone standard, which was revoked in 2005.

The *2007 Ozone Plan,* approved by CARB on June 14, 2007, demonstrates how the SJVAB would meet the federal 8-hour ozone standard. The *2007 Ozone Plan* includes a comprehensive list of regulatory and incentive-based measures to reduce emissions of ozone and particulate matter precursors throughout the SJVAB (SJVAPCD 2007).

On April 16, 2009, the SJVAPCD Governing Board adopted the *Reasonably Available Control Technology Demonstration for Ozone State Implementation Plans* (SJVAPCD 2009). With respect to the 8-hour standard, the plan assesses the SJVAPCD's rules based on the adjusted major source definition of 10 tons per year, evaluates SJVAPCD rules against new Control Techniques Guidelines promulgated since August 2006, and reviews additional rules and amendments adopted by the Governing Board since August 17, 2006.

SJVAPCD adopted the *2016 Plan for the 2008 8-Hour Ozone Standard* in June 2016. This plan satisfies Clean Air Act requirements and ensures expeditious attainment of the 75 parts per billion 8-hour ozone standard (SJVAPCD 2016a). On May 19, 2020, the Governing Board adopted the *2020 Reasonably Available Control Technology Demonstration for the 8-Hour Ozone Standard* (SJVAPCD 2020) that includes a demonstration that the SJVAPCD rules implement Reasonably Available Control Technology (RACT). The plan reviews each of the NO_x reduction rules and concludes that they satisfy requirements for stringency, applicability, and enforceability, and meet or exceed RACT.

Particulate Matter Attainment Plans

Effective November 12, 2008, the USEPA re-designated the SJVAB as an attainment area with respect to the PM_{10} NAAQS and approved the *2007 PM_{10} Maintenance Plan* (USEPA 2008).

The *2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards* was adopted on November 15, 2018, and utilizes extensive science and research, state-of-the-art air quality modeling, and the best available information in developing a strategy to attain the federal health-based 1997, 2006, and 2012 standards for $PM_{2.5}$. The plan consists of a combination of innovative regulatory and non-regulatory measures, including aggressive incentive-based control measures that achieve the emissions reductions needed to bring the area into attainment (SJVAPCD 2018).

University of California Sustainable Practices Policy

The University of California Sustainable Practices Policy is a system-wide commitment to minimize the University's impact on the environment and reduce its dependence on non-renewable energy sources. ~~The UC Sustainable Practices Policy establishes goals in nine areas of sustainable practices. The areas of the policy that are applicable to the proposed project are green building design, clean energy, climate protection, recycling and waste management, and sustainable transportation.~~ The UC Sustainable Practices Policy covers 13 areas of sustainable practices: green building; clean energy; climate action; transportation; sustainable operations; zero waste; procurement; food services; water; healthcare; performance assessment; health and

well-being; and diversity, equity, inclusion, and justice. The UC Sustainable Practices Policy, issued in April 2024, provides specific scope, direction, and expectations for implementing sustainable new capital projects, facility operations, and campus transportation resources. It commits UC to implementing actions intended to minimize UC's impact on the environment and reduce the UC's dependence on non-renewable energy.

Discussion

a) The SJVAPCD has established thresholds of significance for criteria pollutant and precursor emissions, which are based on New Source Review offset requirements for stationary sources. Emission reductions achieved through implementation of offset requirements are a major component of the SJVAPCD's air quality plans. Thus, projects with emissions below the thresholds of significance for criteria pollutants would be determined to comply with the SJVAPCD's air quality plans (SJVAPCD 2015a)

The project-specific air quality emissions analysis, provided in Item (b), below, includes an analysis of both construction and operational emissions estimated using the California Emissions Estimator Model (CalEEMod) and compares the estimated emissions to quantitative thresholds presented in **Table AQ-5**, *SJVAPCD Significance Thresholds*, to determine the level of significance of this impact. As both construction and operational emissions of the proposed project are estimated to be below these thresholds, the proposed project is considered to comply with the SJVAPCD's air quality plans and would, therefore have a less than significant impact with respect to conflict with or obstruct implementation of the applicable air quality plan.

TABLE AQ-5
SJVAPCD SIGNIFICANCE THRESHOLDS

Pollutant/Risk Criteria	Construction	Operations
CO (tpy)	100	100
NOx (tpy)	10	10
ROG (tpy)	10	10
SOx (tpy)	27	27
PM_{10} (tpy)	15	15
$PM_{2.5}$ (tpy)	15	15
Cancer Risk (per million)*	20	20
Acute Hazard Index (unitless)*	1	1
Chronic Hazard Index (unitless)*	1	1

NOTES: tpy = tons per year

* The San Joaquin Valley Air Pollution Control District's current thresholds of significance for toxic air contaminant (TAC) emissions are for operations, however, they are conservatively being applied to construction for the purposes of determining significance.

SOURCE: SJVAPCD 2015a, SJVAPCD 2015b

b) The proposed project would generate criteria air pollutant emissions from both construction and operation, and each are evaluated to determine the extent to which the proposed project may 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. By its very nature, air pollution is largely a cumulative impact. No single project would likely be sufficient in size, by itself, to result in non-attainment of the regional air quality standards. Instead, a project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development within the SJVAB. The non-attainment status of the SJVAB with respect to regional pollutants is a result of past and present development. Future attainment of state and federal ambient air quality standards is a function of successful implementation of SJVAPCD's attainment plans. Consequently, the SJVAPCD's application of thresholds of significance for criteria pollutants is a relevant way to determine whether a project's individual emissions would have a cumulatively significant impact on air quality.

Construction Emissions

The proposed project includes construction activities that would require the use of trucks/ vehicles and heavy construction equipment (e.g., excavator, loader, crane). The project site is approximately five acres in size and would require the grading of approximately five acres. The proposed project would require the import and export of roughly 8,066 cubic yards of cut and fill material. Construction of the proposed project was modelled over an approximately 13-month period beginning in April 2024. Construction is assumed to occur 5 days per week. A quantitative analysis of the proposed project's construction criteria air pollutant emissions was conducted using the California Emissions Estimator Model (CalEEMod) version 2020.4.0 to determine whether the proposed project could result in construction emissions that exceed the SJVAPCD criteria air pollutant significance thresholds. CalEEMod incorporates the engine tier status of equipment by default based on the equipment inventory mixture for the given construction year. The construction emissions are presented in **Table AQ-6,** *Project Construction Emissions Summary*.

TABLE AQ-6
PROJECT CONSTRUCTION EMISSIONS SUMMARY

Construction Year/ Significance Criteria	Construction Emissions (tons)					
	CO	NOx	ROG	SOx	PM_{10}	$PM_{2.5}$
2024	1.93	1.65	0.19	0.00	0.24	0.13
2025	0.58	0.40	0.44	0.00	0.04	0.02
Maximum	1.93	1.65	0.44	0.00	0.24	0.13
SJVAPCD CEQA Threshold	100	10	10	27	15	15
Significant?	No	No	No	No	No	No

NOTES:

SJVAPCD guidance requires analysis of a 13-month rolling average of emissions. For conservative analysis 2024 and 2025 emissions are combined and used as a proxy for the 13-month rolling average.

SOURCE: Appendix B

As shown in Table AQ-6, total construction emissions of the proposed project over the approximately 13-month period would be below the SJVAPCD significance thresholds; therefore, total project emissions on a rolling 13-month period would be well below the significance thresholds. As a result, project construction activities would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment status under an applicable federal or state ambient air quality standard during construction, and this impact would be less than significant. To further reduce this impact, the mitigation measures below, which are similar to mitigation found in the 2020 LRDP EIR, would be applied to the project.

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

MM AQ-1b: The construction contract for the proposed project shall include all measures specified in SJVAPCD Regulation VIII (as amended) to reduce fugitive dust impacts, including but not limited to the following:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purpose, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions 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.

Operational Emissions

Project operation would begin in 2025. Once operational, the proposed project would generate minimal air pollutant emissions. Anticipated operational emissions would

primarily be limited to sources such as vehicle trips, and area sources such as consumer products and landscape maintenance. The expected daily pollutant generation from these sources associated with the proposed project was estimated using CalEEMod and are presented in **Table AQ-7**, *Operational Emission Summary for the Project.*

TABLE AQ-7
OPERATIONAL EMISSION SUMMARY FOR THE PROJECT

Operational Source/ Significance Criteria	Operations (tpy)					
	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Area	0.99	0.06	0.56	0.00	0.01	0.01
Mobile	3.17	0.80	0.33	0.01	0.75	0.21
Total	4.16	0.86	0.89	0.01	0.76	0.22
SJVAPCD CEQA Threshold	100	10	10	27	15	15
Significant?	No	No	No	No	No	No

NOTES:

tpy = tons per year

SOURCE: Appendix B

As shown in Table AQ-7, the proposed project would result in criteria pollutant emissions during project operation that would be well below the significance thresholds. In addition, the proposed building would comply with the UC Sustainable Practices 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 a fully electrified project and would outperform the California Energy Code by 20 percent or better. Therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment status under an applicable federal or state ambient air quality standard during operation, and this impact would be less than significant.

c) Non-criteria pollutants such as hazardous air pollutants or TACs are also regulated by the SJVAPCD. A project that results in an increased cancer risk equal to or greater than 20 in one million for the Maximally Exposed Individual (SJVAPCD 2015b) could be considered to have a significant air quality impact on sensitive receptors. The threshold for Acute and Chronic Non-Carcinogens, is a Hazard Index equal to or greater than one for the MEI (SJVAPCD 2015b).

The on-campus housing is the UC Merced El Portal Student Housing building located approximately 100 feet adjacent to the project site. However, student housing is not considered a sensitive receptor relative to air quality due to the age and the short duration that the occupants typically are in student housing on a campus (UC Merced 2022). Other sensitive receptors are located over 1,000 feet away from the project site.

Potentially harmful airborne pollutants that could be generated by the proposed project include DPM, criteria pollutants, and generation of dust contaminated with fungal spores that may result in contraction of Valley Fever. Therefore, each of these pollutants is addressed below with respect to the proposed project.

Diesel Particulate Matter

Typically, emissions of PM10 exhaust are used as a surrogate for DPM emissions in health risk calculations. As shown in Tables AQ-6 and AQ-7 above, total PM10 emissions from both construction and operation would be well below the SJVAPCD significance thresholds for criteria pollutant assessment. Given the substantial distance to the nearest sensitive receptors (over 1,800 feet), it is reasonable to expect that health risk impacts associated with the construction emissions of the proposed project would be below the SJVAPCD significance thresholds and associated impact from exposure of sensitive receptors to DPM would be less than significant.

Criteria Pollutants

The health effects that are associated with emissions of criteria pollutants are described above under the Criteria Air Pollutants discussions. As described above, compliance with the ambient air quality standards indicates that regional air quality can be considered protective of public health.

As discussed under Item (a), above, construction and operation of the proposed project would not result in emissions that exceed the SJVAPCD's annual emissions thresholds for any of the criteria pollutants. Further, the SJVAPCD recommends that the proposed project be evaluated for potential health impacts to surrounding receptors (on-site and off-site) that would result from operational and multi-year construction if emissions exceed 100 pounds per day of any pollutant, which would require an ambient air quality analysis (AAQA) (SJVAPCD 2015c). Because the maximum daily emissions would be below the screening threshold for an AAQA, the proposed project would not contribute to local exceedances of the NAAQS or the CAAQS. As mentioned, these standards are established at health protective levels and include an adequate margin of safety. Therefore, the construction and operation of the proposed project is not anticipated to result in an adverse health effect with respect to emissions criteria air pollutants.

Valley Fever

Valley Fever is a disease that typically affects the respiratory system and is communicated by fungal spores within soil and airborne dust. Therefore, at-risk activities include those that either create high levels of dust, require workers to be in close contact with soils and dusts, or both. The proposed project is located within Merced County, which is in California's Central Valley. The Central Valley is the region of California considered to be of highest risk for the development of Valley Fever (CDPH 2020); therefore, Valley Fever is a health risk of concern in relation to the proposed project. While Valley Fever is a risk for anyone living or working in the vicinity of the proposed project, the addition of the proposed project would not increase this risk for the existing residences. However, for

the construction workers and other project personnel who would be on-site during construction, risk to their health is a concern.

Project activities that would result in the greatest risk would be those involving the excavation and transport of soils, such as grading and trenching. These activities, along with localized wind conditions, create the work conditions with the highest risk. According to the CDPH and the CDC, avoiding working in soils and dusty conditions is the best preventative measure. Since some construction workers cannot avoid participating in soil disturbance activities, minimizing fugitive dust as well as other engineering controls become the primary preventative measures. Pursuant to AB 203, the proposed project would be required to provide effective awareness training on Valley Fever to all employees annually and before an employee begins work that is reasonably anticipated to cause substantial dust disturbance. In addition, the CDPH Occupational Health Branch and the CDC make recommendations for the protection of workers. The primary protection measures relate to the following: worker training, dust suppression, and personal protective equipment (PPE). With respect to dust suppression, Mitigation Measure AQ-1b which is consistent with SJVAPCD Regulation VIII, Rule 8021 would be implemented during construction to control dust emissions. This would place the proposed project in compliance with these regulatory requirements and would ensure that the potential impacts from Valley Fever would be less than significant.

d) The proposed project may create temporary construction odors from combustion of diesel fuel in equipment engines, but the impact would not be considered significant due to the highly dispersive nature of diesel exhaust. The proposed project is not anticipated to result in emissions that could cause long-term odors or other adverse effects during operations. Therefore, the proposed project would result in a less-than-significant impact related to the generation of odors.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

As discussed under Item (b), above, the project's construction and operational emissions would be less than the thresholds of significance. Therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment status under an applicable federal or state ambient air quality standard. The cumulative impact with respect to criteria air pollutant emissions would be less than significant.

With respect to exposure of sensitive receptors to substantial pollutant concentrations or odors, the substantial distance of the project site from off-site receptors (greater than 1,000 feet) would preclude the proposed project from contributing considerably to any health risk or odor impacts of other cumulative projects.

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Biological Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
IV. BIOLOGICAL RESOURCES — 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?	☐	☒	☐	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Environmental Setting

UC Merced Campus

The UC Merced campus is located in the San Joaquin Valley in eastern Merced County, a transition zone between the Sierra Nevada foothills to the east and the flat San Joaquin Valley floor to the west. The campus is located about two miles northeast of the Merced city limits, southeast of Lake Yosemite Regional Park. The primary land cover types occurring on the campus are California annual grasslands, agricultural lands (irrigated pasture), vernal pools, vernal swales, seasonal wetlands, man-made ponds, seasonal freshwater marsh, drainages, canals, and developed areas, totaling 1,026 acres (UC Merced 2020).

Special-status plant and wildlife species with the potential to occur within or in the vicinity of the UC Merced campus are listed in **Table BIO-1**, *Special-Status Animal and Plant Species with the Potential to Occur in the Vicinity of the UC Merced Campus*. As shown in Table BIO-1, five special-status plant species and 18 special-status wildlife species, including three invertebrate species, two amphibian spaces, one reptile species, 11 bird species, and one mammal species, have the potential to occur within the area.

TABLE BIO-1
SPECIAL-STATUS ANIMAL AND PLANT SPECIES WITH THE POTENTIAL TO OCCUR IN THE VICINITY OF THE UC MERCED CAMPUS

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

NOTES:

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

SOURCE: UC Merced 2020, CDFW, 2022, CNPS 2022, USFWS, 2022

The UC Merced campus also contains designated critical habitat for vernal pool species and California tiger salamander (UC Merced 2020).

Project Site

The project site is located near the southern edge of the developed UC Merced campus. The proposed building site is currently a combined paved and gravel parking lot. The building site is

bordered on the north and east by strips of landscaped vegetation and on the south by a large stormwater basin. The construction staging area is located on a gravel lot to the southeast of the building site. None of the project areas contain natural habitat or wetlands or other waters.

On September 20, 2022, ESA conducted a biological reconnaissance of the area to evaluate sensitive biological resources that could be affected by the proposed project. Before the biological resources survey, ESA biologists searched the California Native Plant Society Rare Plant (CNPS) Inventory and California Natural Diversity Database (CNDDB) for records of special-status species occurring within a nine-quadrangle area containing and surrounding the study area, including Merced, Winton, Yosemite Lake, Haystack Mountain, Atwater, Planada, Sandy Mush, El Nido, and Plainsburg U.S. Geological Survey (USGS) 7.5-minute quadrangles. In addition, the biologists reviewed the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPAC) project planning tool, USFWS National Wetlands Inventory (NWI), USFWS Critical Habitat Mapper.

Impact Discussion

a) The project site consists of a parking lot while the construction staging area consists of a gravel lot, both of which are located in a developed portion of the UC Merced campus. Neither the project site nor the construction staging area contains habitat that is suitable for any of the candidate, sensitive, or special-status species identified in Table BIO-1. All the listed special-status plant species, vernal pool shrimp, reptiles, and amphibians that have the potential to occur on campus are associated with vernal pool or wetland habitats that do not exist on or adjacent to the project site. In addition, none of the trees within a quarter mile of the project site and construction staging area are large enough to support listed raptor species such as Swainson's hawk and the project does not include removal of vegetation that could serve as nesting habitat for other birds. For ground nesting birds such as burrowing owl and killdeer (*Charadrius vociferus*), which are known to occur in the campus area, the project site does not contain any suitable habitat or areas for nesting. Furthermore, there is low potential for San Joaquin kit foxes to occur in the campus area as 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 (UC Merced 2020). While projects can disturb kit fox movement, the project site and construction staging area are part of the larger campus development that would likely be avoided by the species. While there is suitable habitat for the Crotch bumblebee within the vicinity of the larger campus site, there are no known occurrences of the species in the vicinity and the project site does not contain suitable foraging or nesting habitat.

   Although the project will not disturb any suitable habitat, with the location of the campus along the Pacific Flyway migratory route and its setting within a diverse environment that provides habitat for many resident bird species, there is potential for protected resident or migratory bird species to collide with the proposed structure as it would be four stories in height, thus resulting in bird injuries or mortality. However, with the implementation of Mitigation Measure BIO-1, which requires the design of the structure to incorporate bird-safe design practices, this impact would be reduced to a less-than-significant level.

MM BIO-1: The proposed project shall incorporate bird-safe design practices (for example, American Bird Conservancy's Bird- Friendly Building Design [2015] or San Francisco Planning Department's Standards for Bird-Safe Buildings [2011]). The UC Merced Physical and Environmental Planning Department shall review the final designs of the proposed building to determine that appropriate bird safety designs have been effectively incorporated to reduce potential impacts to birds. The following design strategies shall be considered in the design of the proposed building:

- Create building facades with "visual noise" via cladding or other design features that make it easier for birds to identify the building and not mistake windows for open sky or trees.
- Incorporate windows that are not clear or reflective into the building.
- 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.

b) As described above the project area does not contain any riparian areas or sensitive natural communities. The general vicinity does contain areas of known wetlands and vernal pools in addition to Lake Yosemite to the north of the UC Merced campus. However, none of these areas would be directly or indirectly affected by project activities. For these reasons, the proposed project will have no impact on riparian areas or other sensitive natural communities.

c) The project site and construction staging area does not contain any state or federal wetlands or other waters. The general vicinity does contain areas of known wetlands and vernal pools in addition to Lake Yosemite to the north of the UC Merced campus. However, none of these areas would be directly or indirectly affected by project activities. For these reasons, the proposed project will have no impact on wetlands or waters.

d) The proposed project would redevelop an already developed parcel in an urban area. In addition, the construction staging would temporally occur on an already disturbed parcel. The project site and vicinity do not include any known wildlife movement areas, nor do they contain suitable habitat that is likely to be used by any wildlife species. In addition, the project site and construction staging area are part of the larger UC Merced campus and would not alter the footprint of that facility on the larger landscape. For these

reasons, the proposed project will have no impact on wildlife movement or migratory corridors.

e) The project site and construction staging area are State-owned and therefore not subject to local regulations. Therefore, the proposed project will not conflict with any local plans or policies for the protection of biological resources.

f) The project site and construction staging area are not part of any Habitat Conservation Plans or other similar planning documents. Therefore, the proposed project will have no impact on and will not conflict with any of these plans or policies.

Cumulative Impacts

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

As development within the San Joaquin Valley continues, habitat for plant and wildlife species native to the region will be lost through conversion to urban environment. Although more mobile species may be able to survive these changes in their environment by moving to new areas, less mobile species could become extirpated. With continued conversion of natural habitat to urban and agricultural use, the availability and accessibility of habitat would decrease. Several special-status plant and animal species have the potential to occur on or in the vicinity of the UC Merced campus. In addition, sensitive natural communities and state or federally protected wetlands are located on campus and may occur on lands proposed for development to the south and west of the campus. Finally, the UC Merced campus and adjacent lands are located along the Pacific Flyway migratory route, and migratory bird species flying along this route may utilize natural and man-made habitats on campus or on lands in the vicinity to rest and/or forage. Given these circumstances, future development on the UC Merced campus and on lands to the south and west of campus may adversely affect these resources. However, development of the UC Merced campus would be required to implement mitigation that would reduce impacts to protected species and critical habitat to a less-than-significant level (UC Merced 2020). In addition, development adjacent to the campus would be required to protect protected species and critical habitat to the maximum extent feasible. However, because not all impacts to protected species and critical habitat on lands to the south and west of the UC Merced campus have been or can be reduced with certainty to a less-than-significant level, the loss of any biological resources would result in a significant cumulative impact.

As described above under Items (a) through (f), the proposed project would not impact biological resources due to the developed nature of the project site and implementation of MM BIO-1 would ensure that potential impacts to migratory bird from the proposed structure would be reduced to a less-than-significant level. The project site does not contain suitable habitat for any fish and wildlife resources. The wetlands and waters that occur in the project vicinity would not be directly or indirectly impacted by the project. The project would not conflict with any wildlife movement corridors, local regulations, or habitat conservation plans. For these reasons, the

proposed project's contribution to this cumulative impact would not be cumulatively considerable, and thus the cumulative impact would be less than significant.

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Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
V. CULTURAL RESOURCES — Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Environmental Setting

To determine the cultural resources sensitivity of the project site, ESA reviewed previous cultural resources documentation for the UC Merced campus and completed a records search at the Central California Information Center of the California Historical Resources Information System at California State University, Stanislaus on January 12, 2022 (File No. 12041I). The records search reviewed the project site and a quarter-mile radius in order to: (1) determine whether known cultural resources have been recorded within the vicinity of the proposed project; (2) assess the likelihood of unrecorded cultural resources based on historical references and the distribution of environmental settings of nearby sites; and (3) develop a context for identification and preliminary evaluation of cultural resources. Included in the review was the California Office of Historic Preservation Built Environment Resources Directory (BERD) listing for Merced County. The BERD includes listings of the National Register of Historic Places, the California Register of Historical Resources, and the most recent listings of the California Historical Landmarks and California Points of Historical Interest. Historic-period topographic maps and aerial photographs were also reviewed.

No buildings or structures that are listed in or eligible for listing in the National Register and/or the California Register are within the project site. The records search and previous survey efforts indicated that there are no recorded cultural resources located within a quarter-mile radius. The nearest cultural resources to the project site are the Yosemite Canal (24-001891) and the Fairfield Canal (24-000606); both of which have been determined not to be individually eligible for listing in the California Register or the National Register (JRP 2001; Sikes et al. 2019). The nearest Native American pre-contact resource is located approximately 1.5 miles to the south of the project site (UC Merced 2009).

Geologic mapping indicates that the project site is situated on middle and/or lower Pliocene nonmarine sedimentary rocks, with some areas situated on Pliocene-Pleistocene nonmarine sedimentary rocks (Merced County 2008). In most parts of the campus, the soil and surficial alluvial material forms a thin veneer of no more than a few feet over these bedrock units. This geologic formation does not have the potential to contain archaeological resources buried by natural alluvial processes; archaeological resources in this context would be located at or very near to the existing surface (Meyer and Rosenthal 2008). Presently, the entirety of the project site is located in a paved and graveled parking lot, which was constructed after 2005.

Impact Discussion

a) A significant impact would occur if the proposed project caused a substantial adverse change to a historical resource, herein referring to historic-era architectural resources or the built environment, including buildings, structures, and objects. A substantial adverse change includes the physical demolition, destruction, relocation, or alteration of the resource.

There are no historic-era architectural resources on the project site. Therefore, the project would not cause a substantial adverse change in the significance of a historical resource, and there would be no impact with respect to this criterion.

b) This analysis discusses archaeological resources, both as historical resources according to State CEQA Guidelines Section 15064.5, as well as unique archaeological resources as defined in Public Resources Code Section 21083.2(g). A significant impact would occur if the project would cause a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration of the resource.

Based on the results of the records search and environmental context, there is a low potential for previously undocumented archaeological resources to be identified in the project site during project implementation. Although unlikely, the inadvertent discovery of archaeological resources cannot be entirely discounted. Inadvertent damage to archaeological resources during construction would be a potentially significant impact. However, with implementation of Mitigation Measure CUL-1, which provides guidance on the steps to take if previously undocumented archaeological resources are found, this impact would be reduced to a less-than-significant level.

> **MM CUL-1:** 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 project site, 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 University.

c) Based on the records search, no human remains are known to exist within the project site. Although unlikely, the inadvertent discovery of human remains cannot be entirely discounted. Inadvertent damage to human remains during construction would be a potentially significant impact. Implementation of Mitigation Measure CUL-2, which provides guidance on the steps to take if previously undocumented human remains are found, would reduce the impact to a less-than-significant level.

> **MM CUL-2:** If human remains of Native American origin are discovered during ground disturbing activities, the MCCD and the University 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 48 hours after being notified by the Commission.

Cumulative Impacts

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

The Yosemite Canal (24-001891) and the Fairfield Canal (24-000606) have been recorded on the UC Merced campus within a quarter mile of the project site; both canals have been determined not to be individually eligible for listing in the California Register or the National Register. No pre-contact Native American resources have been identified on the campus; the nearest pre-contact resource is over 1 mile to the south. However, there is the possibility that previously undocumented archaeological resources and/or human remains are located on campus or near campus, and development on campus and on these properties could also impact previously undocumented archaeological resources and/or human remains. However, each individual project is subject to review under CEQA and is required to obtain necessary permits and approvals from federal and state resource agencies. As a result of these processes, each project would be required to avoid, minimize, and compensate for impacts on historical and archaeological resources, such that the cumulative impact would be reduced, though not completely eliminated. Because not all such impacts from these other projects have been or can be reduced with certainty to a less-than-significant level, the loss of any cultural resources would result in a significant cumulative impact.

As described above, there are no known historical or archaeological resources within the project site. However, despite the negative findings, ground disturbing activity within the project site has the potential to encounter previously undocumented archaeological resources and/or human remains, and construction-associated grading and excavation could destroy these resources. As a result, implementation of the proposed project could result in a considerable contribution to the cumulative loss of undocumented archaeological resources and/or human remains. However, with the implementation of Mitigation Measures CUL-1 and CUL-2, the contribution of the proposed

project to this impact would be reduced to a less-than-cumulatively-considerable level, and the cumulative impact would be less than significant.

References

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Energy

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
VI. ENERGY — Would the project:				
a) Result in 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?	☐	☐	☐	☒

Environmental Setting

California's energy system includes electricity, natural gas, and petroleum. According to the California Energy Commission (CEC), California's energy system in 2021 generated 72 percent of the electricity, 48 percent of the natural gas, and less than 1 percent of the petroleum consumed or used in the state. The rest of the state's energy is imported and includes electricity from the Pacific Northwest and the Southwest; natural gas purchases from Canada, Rocky Mountain states, and the southwest; and petroleum imported from Alaska and foreign sources (CEC 2022a, 2022b, 2022c).

Electricity

The production of electricity requires the consumption or conversion of energy resources including natural gas, coal, water, nuclear, and renewable sources such as wind, solar, and geothermal. Of the electricity generated in California, approximately 48 percent is generated by natural gas-fired power plants, 9 percent comes from large hydroelectric dams, 8 percent comes from nuclear power plants, and less than 1 percent is generated by coal-fired power plants. The remaining approximately 33 percent of in-state electricity production is supplied by renewable sources, including solar, biomass, geothermal, small hydro, and wind power (CEC 2022a).

Fuels

Gasoline is by far the largest transportation fuel by volume used in California. Nearly all the gasoline used in California is obtained through the retail market. In 2021, approximately 13.8 billion gallons of gasoline were sold in California's retail market (CDTFA 2022a). Diesel fuel is the second largest transportation fuel by volume used in California after gasoline. Approximately 53 percent of total diesel sales in California are associated with retail sales. In 2021, 3.1 billion gallons of diesel were sold in California (CDTFA 2022b).

Local Energy Use

In Merced County, approximately 3,262 million kilowatt-hours (kWh) of electricity were consumed in 2020, with approximately 818 million kWh consumed by residential uses (CEC 2022d).

Regular unleaded gasoline is used primarily to fuel passenger cars and small trucks. Diesel fuel is used primarily in large trucks and construction equipment. Both types are used widely in Merced County. CEC estimates that 122 million gallons of gasoline and approximately 33 million gallons of diesel were sold in 2021 in Merced County (CEC 2022e).

Regulatory Setting

Federal

Energy Policy Act of 2005

The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, consumers and businesses can obtain federal tax credits for purchasing fuel-efficient appliances and products, including buying hybrid vehicles, building energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

State

California Integrated Energy Policy

In 2002, the Legislature passed Senate Bill 1389, which required the CEC to develop an integrated energy plan every 2 years for electricity, natural gas, and transportation fuels, for the California Energy Policy Report. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a few strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission vehicles and their infrastructure needs, and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

The CEC has adopted the 2019 Integrated Energy Policy Report, which assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources, protect the environment, ensure reliable, secure, and diverse energy supplies, enhance the state's economy, and protect public health and safety. The 2019 Integrated Energy Policy Report covers a broad range of topics, including energy efficiency, building energy efficiency standards, achieving 60 percent renewables by 2030, and the California Energy Demand Forecast.

Title 24 – California Energy Efficiency Standards

The Energy Efficiency Standards for residential and nonresidential buildings specified in Title 24, Part 6 of the California Code of Regulations were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The goals of the Title 24 standards are to improve energy efficiency of buildings, minimize impacts during peak energy-usage periods, and reduce impacts on state energy needs. The standards are updated approximately every three years to allow for consideration and possible incorporation of new energy-efficiency technologies and methods. The current standards became effective on January 1, 2020.

California Green Building Standards Code (CALGreen, or Title 24 Part 11)

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) code. CALGreen is intended to encourage more sustainable and environmentally friendly building practices, require low-pollution emitting substances that cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient

materials and equipment. Since 2011, CALGreen is mandatory for all new residential and non-residential buildings constructed in the state. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. CALGreen was most recently updated in 2019, with new measures taking effect on January 1, 2020. The 2022 CALGreen code will go into effect on January 1, 2023.

Construction Equipment Idling

The California Air Resources Board (CARB) has adopted a regulation (13 Cal. Code Regs. Section 2449 et seq.) for in-use off-road diesel vehicles that is designed to reduce emissions from diesel-powered construction and mining vehicles by imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles. The regulation requires an operator of applicable off-road vehicles (self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on-road) to limit idling to no more than 5 minutes.

Local

University of California Sustainable Practices Policy

The University of California Sustainable Practices Policy is a system-wide commitment to minimize the University's impact on the environment and reduce its dependence on non-renewable energy sources. ~~The UC Sustainable Practices Policy establishes goals in nine areas of sustainable practices. The areas of the policy that are applicable to the proposed project are green building design, clean energy, climate protection, recycling and waste management, and sustainable transportation.~~ The UC Sustainable Practices Policy covers 13 areas of sustainable practices: green building; clean energy; climate action; transportation; sustainable operations; zero waste; procurement; food services; water; healthcare; performance assessment; health and well-being; and diversity, equity, inclusion, and justice. The UC Sustainable Practices Policy, issued in April 2024, provides specific scope, direction, and expectations for implementing sustainable new capital projects, facility operations, and campus transportation resources. It commits UC to implementing actions intended to minimize UC's impact on the environment and reduce the UC's dependence on non-renewable energy.

Impact Discussion

a) Energy resources necessary to construct the proposed project would consist of gasoline and diesel fuel consumed by heavy equipment and vehicles during construction as well as lighting for the temporary construction staging areas. The volume of diesel and gasoline fuels that would be consumed during construction were calculated using the estimated greenhouse gas emissions and shown to require approximately 40,623 gallons of gasoline and 8,401 gallons of diesel fuel (see **Appendix C**). Fuel use during construction would represent approximately 0.033 percent of gasoline and 0.025 percent of diesel sold in Merced County in 2021 (CEC 2022e). Overall, the fuel use during construction would be minimal in comparison to the overall fuel use within Merced County.

The proposed project would be fully electrified; no natural gas would be required. As a result, operation of the proposed project would require energy in the form of electricity for building heating, cooling, cooking, lighting, water demand and wastewater treatment,

consumer electronics, and other energy needs. Transportation-fuels, primarily gasoline, would be required for vehicles traveling to and from the project site. The proposed building would comply with the UC Sustainable Practices 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, which would result in increased energy efficiency compared to standard construction practices. Additionally, the proposed project is anticipated to comply with 2022 CALGreen and also exceed Title 24 electricity requirements by at least 20 percent to comply with the UC Sustainable Practices Policy and the Campus's sustainable practice design guidelines.

For these reasons, energy use during the construction and operation of the proposed project would not be wasteful, inefficient, or unnecessary, and this impact would be less than significant.

b) If a project were to conflict with state energy standards or local goals for energy efficiency, this would suggest that energy resources were being used in a wasteful manner. The energy standards noted in the Regulatory Setting, including the State Energy Policy Act of 2005, promote strategic planning and include goals to reduce consumption of fossil fuels, increase the use of renewable resources, and generally enhance energy efficiency.

Construction and operation of the proposed project would be conducted in a manner consistent with the goals and strategies of energy standards such as Title 24. The UC Sustainable Practices 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 employ an array of design and technological strategies to minimize and manage campus energy consumption and thus are using approximately 50 percent less energy than Title 24 standards. The design of the new building would follow these appropriate building design requirements to minimize energy use.

The proposed project would comply with the state's regulation for in-use off-road diesel vehicles, which requires idling to be limited to no more than five minutes. Given such compliance, fuel energy consumed in the construction phase would not be wasted through unnecessary idling. Project construction would be short-term and would not result in a permanent increase in the use of nonrenewable energy resources. The electricity that would be supplied to the proposed project would mostly be from renewable energy, as more than 93 percent of the electricity used at UC Merced already comes from renewable sources. As established in this section, construction fuel use would represent a negligible percentage of the overall amount of fuel consumed annually in Merced County and would not conflict with current energy conservation standards as discussed above. Fuel use for project operation would be similar to neighboring student housing to the north of the project site. Therefore, the proposed project would not conflict with or obstruct a state or local plan, and no impact would occur under this criterion.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

Energy use associated with cumulative development on and off campus would be limited to resources required to construct the projects and would not result in a permanent increase in the use of nonrenewable resources. Projects would have to comply with the state's regulation for in-use off-road diesel vehicles, which would limit fuel energy waste through unnecessary idling. Therefore, the cumulative impact with respect to energy resources during construction would be less than significant.

Future growth on the campus, including the proposed project, would aim to exceed Title 24 energy efficiency standards by at least 20 percent by incorporating energy conservation measures and design features to meet or exceed this goal. Additionally, the proposed project will increase the supply of on-campus student housing to minimize private automobile use and associated petroleum-based fuel use. Finally, future development to the south and west of the campus would be subject to compliance with all federal, state, and local requirements for energy efficiency, including the California Energy Efficiency Standards and the CALGreen Code. For these reasons, cumulative development on and off campus would not result in the inefficient use of energy during operation, and the cumulative impact with respect to energy resources during operation would be less than significant.

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Geology and Soils

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
VII. GEOLOGY AND SOILS — 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.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☒	☐	☐
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?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Environmental Setting

Geologic Overview

The UC Merced campus is located in the San Joaquin Valley of the Great Valley geomorphic province. The Great Valley is an elongated lowland approximately 50 miles wide and 450 miles long. It is bounded by the Klamath Mountains to the north, the Sierra Nevada Range to the east, the Tehachapi Mountains to the south and the Coast Range to the west. The Great Valley is generally just a few hundred feet above mean sea level (msl), with extremes ranging from a few feet below msl to about 1,000 feet above msl. Geologically, the Great Valley geomorphic province is a large elongate northwest-trending asymmetric structural trough that has been filled with a very thick sequence of sediments ranging in age from Jurassic to Recent (UC Merced 2009).

Seismic Hazards

The UC Merced campus is located in an area that has historically been characterized by low seismic activity. No active faults have been identified in the immediate vicinity of the campus and

the nearest active fault in Merced County is the Ortigalita fault, located in the western quarter of Merced County. The closest seismic source is the northwest-trending Foothills fault system, which terminates approximately 15 miles northeast of the campus. The faults associated with the Foothills fault system are inactive (UC Merced 2009).

The California Earthquake Hazards Zone Application (EQ Zapp) is an interactive map available on the California Geological Survey (CGS) website. The EQ Zapp allows users to view all available earthquake hazard zone data, including earthquake fault, liquefaction, and earthquake-induced landslide zones. Holocene-active faults are designated Earthquake Fault Zone (EFZ) because they display evidence of surface rupture within the last 11,700 years. The project area is not within an established EFZ as delineated on an EFZ Map, required by the Alquist-Priolo Earthquake Fault Zoning Act (California Geological Survey 2022).

Soils

The entire UC Merced campus has been described as consisting of low to high terraces with some areas in alluvial fans and floodplains (UC Merced 2009). Soils within the campus are generally alluvial, forming a thin layer over bedrock units beneath. The soils generally consist of poorly sorted gravel, sand, silt, and clay, and are generally gravelly and acidic with low fertility. These soils have a moderate shrink-swell potential, with a granular, clayey, and relatively consolidated and cemented nature (UC Merced 2009).

Soils on the project site generally consist of Corning gravelly loam and Hopeton clay loam. These soils have a moderate to high shrink-swell potential, with a clayey, relatively consolidated and cemented nature. In addition, these soils are moderately well drained and consist of alluvium (NRCS 2022).

Impact Discussion

a.i) There are no known faults that pass through the UC Merced campus, including the project site, and the campus, including the site, is not located within a State of California EFZ. The nearest active fault is the Great Valley fault, located approximately 30 miles southwest of the UC Merced campus. Given the distance of the nearest active fault, there would be no impact with respect to this criterion.

a.ii) The UC Merced campus, including the project site, is vulnerable to ground shaking from seismic events on several faults that run through the mountains to the east and west of Merced County, although the risk from ground shaking in the area is low as the level of seismic activity in this region of the State is low. However, despite this low level of risk, the proposed project could still expose people or structures to risk from strong seismic ground shaking. However, with the implementation of Mitigation Measure GEO-1, which would require that a site-specific geotechnical investigation be performed for the proposed project, this impact would be reduced to a less than significant level.

> **MM GEO-1**: 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 the 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.

a.iii) Although liquefaction can occur in the Central Valley, there are no areas on or adjacent to the UC Merced campus, including the project site, that are at a significant risk of such seismically induced events. In addition, the UC Merced campus, including the project site, is underlain by a hardpan layer of soil within three feet of the surface, serving to significantly reduce liquefaction hazards. However, despite the low potential for liquefaction on the UC Merced campus, the possibility that the proposed project would expose people or structures to risk from seismic-related liquefaction cannot be entirely ruled out. However, with the implementation of Mitigation Measure GEO-1, which would require that a site-specific geotechnical investigation be prepared, this impact would be reduced to a less than significant level.

a.iv) The UC Merced campus, including the project site, and the surrounding area are characterized by flat topography and are located at a substantial distance from the closest range front. Therefore, the project site is not subject to hazards related to landslides or landslide runout, which includes seismically induced and non-seismic landslides. There would be no impact with respect to this criterion.

b) The project site consists of a parking lot. As a result, the project would not result in direct loss of topsoil resources. However, construction of the proposed project would require grading and excavation, which would expose soil to erosion. As the proposed project would occur on an area greater than 1 acre in size, it would be subject to National Pollutant Discharge Elimination System (NPDES) storm water regulations, which would require preparation of a stormwater pollution prevention plan (SWPPP) that would include best management practices 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. Therefore, the impact related to substantial soil erosion is expected to be less than significant.

c) Issues related to seismically induced and non-seismic landslide hazards are discussed in the response to Item (a)(iv), above. Issues related to liquefaction and related hazards are discussed in the response to Item (a)(iii), above. Issues related to soil properties are discussed in the response to Item (d), below. Implementation of Mitigation Measure GEO-1 would address risks associated with unstable soils, and this impact would be reduced to a less than significant level.

d) While soils on the project site have a moderate to high shrink-swell potential, and thus are considered expansive, with the implementation of Mitigation Measure GEO-1, which would require that a site-specific geotechnical investigation be performed during project-specific building design, this impact would be reduced to a less than significant level.

e) No septic tanks or alternative wastewater disposal systems are included in the proposed project, and thus there would be no impact regarding this criterion.

f) The project site is developed and flat, and thus has no unique geologic features. There are no known areas on or within the vicinity of campus that are known to contain sites of paleontological significance (University of California Museum of Paleontology 2022). As discussed above, subsurface soils on the site are moderately well-drained and consist of alluvial material. Such materials are considered to have a very low likelihood of containing significant paleontological features. In addition, the project site has been disturbed by past grading activities. However, despite the low potential for paleontological resources to be located on the project site, the presence of these resources on the site cannot be entirely ruled out. However, with the implementation of Mitigation Measure GEO-2, which outlines procedures to take to protect unknown paleontological resources if they are encountered on the project site during construction, this impact would be reduced to a less than significant level.

> **MM GEO-2**: 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.

Cumulative Impact Discussion

Geologic impacts such as those related to risk from faults, liquefaction potential, slope stability, landslide potential, expansive and compressible soils are generally site-specific and do not cumulate. Therefore, the proposed project and other development in the vicinity of the project site on the UC Merced campus and on adjoining properties to the west and south of the campus would not result in a significant cumulative impact related to geologic risks.

The one area where the impacts of concurrent construction projects have the potential to cumulate is related to soil erosion and discharge of sediment into receiving waters during construction. Future projects on the UC Merced campus, including the proposed project, would be required to prepare and implement a SWPPP to reduce soil erosion and loss of topsoil during construction activities (UC Merced 2009). Development on properties adjacent to campus would also be required to adhere to applicable federal, state, and local regulations that prevent substantial soil erosion or loss of topsoil during construction. As a result, the cumulative impact of the proposed project and other cumulative development on and adjacent to the UC Merced campus associated with soil erosion or the loss of topsoil would be less than significant.

References

California Geological Survey. 2022. California Earthquake Hazards Zone Application (EQ ZAPP). Earthquake Zones of Required Investigation. California Geological Survey. Available online: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed October 24, 2022.

Natural Resources Conservation Service (NRCS). 2022. Web Soil Survey. Available online: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 27, 2022.

UC Merced. 2009. *UC Merced and University Community Project Environmental Impact Statement/Environmental Impact Report*. SCH No. 2008041009. Certified March 19, 2009.

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Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
VIII. GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Environmental Setting

Greenhouse gases (GHGs) trap heat by preventing some of the solar radiation that hits the earth from being reflected back into space. Some GHGs occur naturally and are needed to keep the earth's surface habitable. Over the past 100 years, human activity has substantially increased the concentration of GHGs in our atmosphere. This has intensified the greenhouse effect, increased average global temperatures, and resulted in climate change.

Carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are the principal GHGs of concern. CO_2, CH_4, and N_2O occur naturally and through human activity. Emissions of CO_2 are largely by-products of fossil fuel combustion, and CH_4 results from off-gassing associated with agricultural practices and landfills.

CO_2 is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas contributes to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent GHGs than CO_2, with 100-year GWPs of 25 and 298 times that of CO_2, respectively (IPCC 2007). In emissions inventories, GHG emissions are typically reported in metric tons of CO_2 equivalents ($MTCO_2e$). CO_2e is calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in such vastly greater quantities that it accounts for the majority of GHG emissions in CO_2e.

Greenhouse Gas Sources

Anthropogenic GHG emissions in the United States are derived mostly from the combustion of fossil fuels for transportation and power production. Energy-related CO_2 emissions resulting from fossil fuel exploration and use account for approximately three-quarters of the human-generated GHG emissions in the United States, primarily in the form of CO_2 emissions from burning fossil fuels. More than half of the energy-related emissions come from large stationary sources, such as power plants; approximately one-third derive from transportation sources; and a majority of the remaining sources are industrial processes, agriculture, commercial, and residential (USEPA 2022).

Statewide emissions of GHG from relevant source categories for 2013 through 2019 are summarized in **Table GHG-1**, *California Greenhouse Gas Emissions*. Specific contributions from individual air basins, such as the San Joaquin Valley Air Basin (SJVAB), which encompasses the Project site, are included in the emissions inventory but not itemized by air basin. In 2019, California produced 418.2 million gross metric tons of CO_2e emissions. Transportation was the source of 41 percent of the state's GHG emissions, followed by the industrial sector at 24 percent, electricity generation at 14 percent, and commercial and residential sources at 14 percent; agriculture and forestry composed the remaining 8 percent (CARB 2022).

TABLE GHG-1
CALIFORNIA GREENHOUSE GAS EMISSIONS (MILLION METRIC TONS CO_2E)

Emission Inventory Category	2013	2014	2015	2016	2017	2018	2019	
Electricity Generation (In State)	51.60	52.17	50.97	42.27	38.31	38.63	37.25	9%
Electricity Generation (Imports)	40.09	36.86	33.99	26.40	24.00	24.62	21.72	5%
Transportation	166.1	167.4	170.9	174.3	175.6	174.0	170.3	41%
Industrial	102.3	103.4	101.3	100.3	100.3	100.8	99.9	24%
Commercial	21.43	21.29	22.03	23.19	23.40	23.90	24.17	6%
Residential	32.04	27.19	27.95	29.28	30.39	30.48	33.02	8%
Agriculture and Forestry	33.83	34.68	33.53	33.29	32.49	32.75	31.75	8%
Not Specified (Solvents & Chemicals)	0.01	0.01	0.25	0.08	0.01	0.08	0.1	<0.1%
Total Gross Emissions	**447.4**	**443.0**	**440.7**	**429.0**	**424.5**	**425.1**	**418.2**	**100%**

NOTES:
The greenhouse gas percentages of the total gross emissions for year 2019 were rounded to the nearest whole number.

SOURCE: CARB, 2022.

Regulatory Setting

Federal

Clean Air Act

On April 2, 2007, in *Massachusetts v. USEPA* (549 US 497), the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. On April 17, 2009, the USEPA Administrator signed proposed "endangerment" and "cause or contribute" findings for GHGs under Section 202(a) of the Clean Air Act. The USEPA found that six GHGs, taken in combination, endanger both the public health and the public welfare of current and future generations. Pursuant to Code of Federal Regulations (CFR) Title 40, Part 52, *Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule*, USEPA has mandated that Prevention of Significant Deterioration (PSD) and Title V requirements apply to facilities whose stationary-source CO_2e emissions exceed 100,000 tons per year (USEPA 2020). The Project would not trigger PSD or Title V permitting under this regulation because it would generate less than 100,000 tons of CO_2e emissions per year.

State

A variety of statewide rules and regulations mandate the quantification and, if emissions exceed established thresholds, the reduction of GHGs. CEQA requires lead agencies to evaluate project related GHG emissions and the potential for projects to contribute to climate change and to provide appropriate mitigation in cases where the lead agency determines that a project would result in a significant addition of GHGs to the atmosphere.

Executive Order S-3-05

In June 2006, Governor Arnold Schwarzenegger signed Executive Order S-3-05, which established the following statewide emission-reduction targets through the year 2050:

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

This executive order does not contain any requirements that directly pertain to the Project; however, future actions taken by the State of California to implement these goals may affect the Project, depending on the specific implementation measures that are developed.

Assembly Bill 32

California Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, required the California Air Resources Board (CARB) to establish a statewide GHG emissions cap for 2020 based on 1990 emissions levels. AB 32 required CARB to adopt regulations that identify and require selected sectors or categories of emitters of GHGs to report and verify their statewide GHG emissions, and CARB is authorized to enforce compliance with the program. Under AB 32, CARB also was required to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990, which had to be achieved by 2020. CARB established this limit in December 2007 at 427 million metric tons of CO_2e. This is approximately 30 percent below forecasted "business-as-usual" emissions of 596 million metric tons of CO_2e in 2020, and about 10 percent below average annual GHG emissions during the period 2002 through 2004 (CARB, 2009). In the interest of achieving the maximum technologically feasible and cost-effective GHG emission reductions, AB 32 permits the use of market-based compliance mechanisms and requires CARB to monitor compliance with and enforce any rule, regulation, order, emissions limitation, emissions reduction measure, or market-based compliance mechanism that it adopts.

Climate Change Scoping Plan (AB 32 Scoping Plan)

In December 2008, CARB approved the AB 32 Scoping Plan, outlining the State of California's strategy to achieve the 2020 GHG emissions limit. The Scoping Plan estimates a reduction of 174 million metric tons CO_2e (about 191 million tons) from the transportation, energy, agriculture, forestry, and high-climate-change-potential sectors, and proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify California's energy sources, save energy, create new jobs, and enhance public health. The Scoping Plan must be updated every 5 years to evaluate the mix of AB 32 policies to ensure that California is on track to achieve the 2020 GHG reduction goal.

Appendices C and E of the adopted 2008 AB 32 Scoping Plan include a list of 39 recommended action measures to reduce GHG emissions (CARB, 2009).

CARB released its first Scoping Plan Update in May 2014, its second Scoping Plan Update in November 2017 (CARB, 2014; CARB, 2017), and the third update ~~is currently in progress~~ was released in December 2022. On December 14, 2017, CARB approved the final version of California's *2017 Climate Change Scoping Plan* (2017 Scoping Plan Update), which outlines the proposed framework of action for achieving the 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels (CARB, 2017). The 2017 Scoping Plan Update identifies key sectors of the implementation strategy, which includes improvements in low carbon energy industry, transportation sustainability, statewide 2030 emissions limit is 260 million metric tons CO_2e, and that further commitments will need to be made to achieve an additional reduction of 50 million metric tons CO_2e beyond current policies and programs. The cornerstone of the 2017 Scoping Plan Update is an expansion of the Cap-and-Trade Program to meet the aggressive 2030 GHG emissions goal represented by Senate Bill (SB) 32 and ensure achievement of the 2050 limit set forth by Executive Order B-30-15. There are no recommended actions identified in the Scoping Plan Updates that are directly applicable to the Project.

On December 15, 2022, CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan). The 2002 Scoping Plan builds on the 2017 Scoping Plan as well as the requirements set out in AB 1279, which directs the state to become carbon neutral no later than 2045. To achieve this objective, the 2022 Scoping Plan details how the State can reduce GHG emissions by 85 percent below 1990 levels and achieve carbon neutrality by 2045. The plan focuses on building clean energy production and distribution infrastructure for a carbon-neutral future, including transitioning existing energy production and transmission infrastructure to produce zero-carbon electricity and hydrogen, and utilizing biogas resulting from wildfire management or landfill and dairy operations, among other substitutes. The 2022 Scoping Plan states that in almost all sectors, electrification will play an important role. The 2022 Scoping Plan evaluates clean energy and technology options and the transition away from fossil fuels, including adding four times the solar and wind capacity by 2045 and about 1,700 times the amount of current hydrogen supply. As discussed in the 2022 Scoping Plan, EO N-79-20 requires all new passenger vehicles sold in California to be zero-emission by 2035, and all other fleets will have transitioned to zero-emission as fully possible by 2045, which will reduce the percentage of fossil fuel combustion vehicles. In addition, the 2022 Scoping Plan includes key project attributes that reduce operational GHG emissions in Appendix D, Local Actions, of the 2022 Scoping Plan. Related to residential and mixed-use projects these key project attributes include transportation electrification, VMT reduction, and building decarbonization.

California Renewable Energy Programs

In 2002, California initially established its Renewables Portfolio Standard (RPS), with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent by 2017. State energy agencies recommended accelerating that goal, and California Executive Order S-14-08 (November 2008) required California utilities to reach the 33 percent renewable electricity goal by 2020, consistent with the AB 32 Scoping Plan. In April 2011, SB 2 of the First Extraordinary Session (SB X1-2) was signed into law. SB X1-2 expressly applied the new 33 percent RPS by

December 31, 2020, to all retail sellers of electricity and established renewable energy standards for interim years prior to 2020. In 2018, SB 100, the California Clean Energy Act of 2017, was signed into law. This bill established a target to supply the state with 100 percent renewable and zero-carbon energy resources by 2045.

Senate Bill 97

In 2007, the California Legislature passed SB 97, which required amendment of the State CEQA Guidelines to incorporate analysis and mitigation of GHG emissions from projects subject to CEQA. The amendments took effect March 18, 2010. The amendments added Section 15064.4 to the State CEQA Guidelines, specifically addressing the potential significance of GHG emissions. Section 15064.4 calls for a "good faith effort" to "describe, calculate or estimate" GHG emissions and indicates that the analysis of the significance of any GHG impacts should include consideration of the extent to which projects would:

- Increase or reduce GHG emissions;
- Exceed a locally applicable threshold of significance; or
- Comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions."

The State CEQA Guidelines also state that a project may be found to have a less-than-significant impact related to GHG emissions if it complies with an adopted plan that includes specific measures to sufficiently reduce GHG emissions (14 CCR Section 15064(h)(3)). Importantly, however, the State CEQA Guidelines do not require or recommend a specific analytical methodology or provide quantitative criteria for determining the significance of GHG emissions.

Executive Order B-30-15

In April 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. Reaching this emission reduction target will make it possible for California to reach its ultimate goal of reducing emissions 80 percent under 1990 levels by 2050, as identified in Executive Order S-3-05.

Executive Order B-30-15 required CARB to update the AB 32 Climate Change Scoping Plan to incorporate the 2030 target. As discussed below, on September 8, 2016, Governor Brown signed SB 32, which codified the 2030 reduction target (i.e., 40 percent below 1990 levels) called for in Executive Order B-30-15. CARB's 2017 Scoping Plan update (discussed above) also addresses the 2030 target.

Senate Bill 32 and Assembly Bill 197

Signed into law on September 8, 2016, SB 32 (Amendments to California Global Warming Solutions Act of 2006: Emission Limit) amended Health and Safety Code Division 25.5 and codified the 2030 target in Executive Order B-30-15, establishing a new climate pollution reduction target of 40 percent below 1990 levels by 2030. The 2030 target is intended to ensure that California remains on track to achieve the goal set forth by Executive Order B-30-15 to reduce statewide GHG emissions by 2050 to 80 percent below 1990 levels. AB 197 included provisions to ensure that the benefits of state climate policies include disadvantaged communities.

Local

San Joaquin Valley Air Pollution Control District

CEQA requires lead agencies to establish specific procedures for administering its responsibilities under CEQA, including orderly evaluation of projects and preparation of environmental documents. The Project site is located within the SJVAB, which is managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD). In part, as a response to this CEQA requirement, in August 2008, SJVAPCD's Governing Board adopted the Climate Change Action Plan (CCAP) (SJVAPCD, 2009a). Based on that plan, SJVAPCD created guidance to evaluate the significance of a project's GHG emissions. The guidance covers projects that include Best Performance Standards (BPS) and projects that do not implement BPS (SJVAPCD, 2009b).

CEQA reviews for projects implementing BPS would not require quantification of project specific GHG emissions. Consistent with the State CEQA Guidelines, such projects would be determined to have less-than-significant individual and cumulative impacts for GHG emissions. For CEQA reviews of projects not implementing BPS, SJVAPCD recommends quantifying project-specific GHG emissions and demonstrating that project-specific GHG emissions would be reduced or mitigated by at least 29 percent, compared to Business-as-Usual (BAU), including GHG emission reductions achieved since the 2004 baseline period. Projects that would achieve at least a 29 percent GHG emissions reduction compared to BAU are considered consistent with the AB 32 emissions reduction goal for 2020. However, this quantitative approach is no longer valid because it is based on a reduction target year that has already passed and ignores additional reduction targets for year 2030 implemented by the Climate Change Scoping Plan Update and SB 32, as described above.

University of California Sustainability Plans

University of California Sustainable Practices Policy

The University of California Sustainable Practices Policy is a system-wide commitment to minimize the University's impact on the environment and reduce its dependence on non-renewable energy sources. The UC Sustainable Practices Policy establishes goals in 13 ~~nine~~ areas of sustainable practices. The UC Sustainable Practices Policy is reviewed and updated every few years; the Policy was last updated in April 2024. The areas of the policy that are applicable to the proposed project are green building design, clean energy, climate protection, recycling and waste management, and sustainable transportation.

UC Merced Sustainability Strategic Plan 2017–2022

In 2017, UC Merced released a Sustainability Strategic Plan to describe its approach to achieving its sustainability goals. The ambitious central focus of the plan is the achievement of zero net energy usage, zero landfill waste, and zero net GHG emissions by 2020. Not only does the plan provide campus principles related to sustainability, but it also provides insight about the specific actions that will allow UC Merced to maintain its principles and meet its goals, even as the campus grows.

UC Merced 2020 Long-Range Development Plan

The UC Merced 2020 Long-Range Development Plan (LRDP) is a guide for future land use patterns and physical development on the UC Merced campus. The 2020 LRDP establishes a "triple zero commitment" to produce zero net GHG emissions, zero waste, and zero net water.

Methodology

The proposed project would be located on the UC Merced campus which has adopted GHG emission reduction plans and strategies that may be used to assess the potential for GHG impacts related to on-campus development. Recently, the Campus has evaluated GHG impacts based on emissions reduction goals set forth in AB 32 and SB 32 (UC Merced 2022). According to AB 32 and SB 32, the State's emissions must be reduced to 1990 emissions levels by 2020, and 40 percent below 1990 emissions by 2030, respectively. Using UC Merced's 2005 GHG emissions as baseline, and reduction targets from the State laws, two campus-specific thresholds were developed: 1) a total emissions threshold; and 2) 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 first threshold applies to the campus as a whole and not to individual projects. The second threshold applies to individual projects and is used in the analysis below.

For the purposes of the analysis below, it is assumed that the housing building will be fully electrified as a standalone building and will not draw from UC Merced's Central Plant.

Impact Discussion

a) The proposed project's construction activities would include site preparation, grading, building construction, paving, and architectural coating. California Emissions Estimator Model (CalEEMod) version 2020.4.0 was used to model construction emissions for the Project which are anticipated to occur in 2024 and 2025. **Table GHG-2**, *Annual Project Construction GHG Emissions*, presents the construction GHG emissions for the proposed project.

TABLE GHG-2
ANNUAL PROJECT CONSTRUCTION GHG EMISSIONS

Construction Year	CO_2e metric tons/year
2024	390.57
2025	97.96
Project Subtotal	488.53

SOURCE: Appendix B

Emissions during operations would occur from vehicle visits to the project site associated with Merced College students who would reside in the proposed housing project, increased energy demand within the new building; energy used to pump, convey and deliver water that would be used by the student residents, and solid waste generation and

disposal. CalEEMod was used to estimate annual operational emissions for the first year of operation in 2025. **Table GHG-3**, *Annual Project GHG Emissions*, presents the annual GHG emissions for the proposed project. Construction emissions were amortized over 40 years based on the projected operational life of the project and added below.

TABLE GHG-3
ANNUAL PROJECT GHG EMISSIONS

Source	CO_2e metric tons/year
Area	58.27
Energy	83.30
Mobile	769.09
Waste	30.07
Water	11.67
Total construction emissions, amortized over 40 years	12.21
Total Project Emissions	**968.39**
Total Project Population	**488**
Per Capita Emissions	**1.98**
Threshold	**2.44**
Significant?	**No**

SOURCE: Appendix B

The proposed project would include the development of an approximately 124,400-square-foot apartment building with 130 apartment units that would house approximately 488 residents (478 students, nine resident advisors, and one resident director). As shown in Table GHG-3, the proposed project would result in 1.98 metric tons of CO2e on a per capita basis, which would be below the efficiency threshold of 2.44 metric tons of CO2e per capita. Therefore, GHG emissions associated with the proposed project would result in a less than significant impact on the environment.

The 2020 LRDP SEIR found that the campus' total emissions in 2030 would exceed the threshold for 3,300 metric tons of CO_2e per year, thus resulting in a potentially significant impact. The 2020 LRDP SEIR identified mitigation (2020 LRDP Mitigation Measures GHG-1a, GHG-1b, and GHG-1c) to reduce this impact to a less-than-significant level (UC Merced 2020). Those measures do not apply to individual projects, such as the proposed project, and are implemented at a campus-wide level to ensure that the operational emissions of the campus remain below the total emissions threshold.

b) Although proposed in order to house Merced College students as well as transfer students, the project that would be designed, constructed, operated and maintained by UC Merced under a memorandum of agreement with the MCCD. Therefore, the proposed project would be required to adhere to requirements contained in the UC Merced Sustainability Plan that are appliable to all new development on the UC Merced campus. The proposed project would implement measures to ensure compliance with the 2020

> LRDP and its triple zero commitment. Furthermore, the proposed project would be designed to surpass Title 24 [California's Energy Efficiency Standard] minimum efficiency standards by 20 percent and achieve LEED credits for optimizing energy efficiency (UC Sustainable Practices Policy TZC-1, excerpt). Finally, the proposed project would also comply with the UC Sustainable Practices Policy and the Campus's sustainable practice design guidelines. It is anticipated that the building would be a fully electrified and achieve Gold level under the LEED Green Building Rating System. As the proposed project contains project design elements that encourage GHG reductions, implementation of the proposed project would not conflict with applicable plan, policy, or regulations pertaining to GHGs, and this impact would be less than significant.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

Climate change is the cumulative effect of all natural and anthropogenic sources of GHGs accumulated on a global scale. The GHG emissions from an individual project, even a very large development project, would not individually generate sufficient GHG emissions to measurably influence global climate change, and thus the above assessment of the project's GHG emissions impacts is inherently a cumulative analysis. As discussed under Item (a), GHG emissions associated with the project would be below the efficiency threshold, and thus the cumulative impact with respect to GHG emissions would be less than significant.

References

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Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
IX. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐

Environmental Setting

Hazardous Material Contamination

While there are no active hazardous materials sites present on the UC Merced campus, there is one closed cleanup program site located on the campus at 5200 North Lake Road, approximately 0.5 miles away from the project site (DTSC 2022; SWRCB 2022). The nearest active contaminated site is a school investigation site located approximately 3 miles west of the project area, at Arrow Wood Drive and M Street (DTSC 2022).

Airports

There are two airports located near the UC Merced campus, the Merced County Castle Airport, approximately 8 miles west of the campus in Atwater, and the Merced Regional Airport, about 7 miles southwest of the campus in Merced.

Emergency Response

UC Merced has adopted both an Emergency Operations Plan and a Crisis Communications Plan that the proposed project would abide by (UC Merced 2009, 2013). The Emergency Operations

Plan is intended to protect lives and the physical integrity of the campus, including the ability to continue the business and functions of the institution, by providing guidelines for the structured management of any size of emergency or disaster. The Crisis Communications Plan provides policies and procedures for the coordination of communications within the Campus, and between the Campus, the media, and the public in the event of an emergency or controversial issue such as a fire, natural disaster, bomb threat, or major crime. The Campus emergency response team is trained and equipped to respond to hazardous materials emergencies.

Wildfire Hazards

The California Department of Forestry and Fire Protection (Cal Fire) Forest Resource Assessment Program (FRAP) publishes maps that delineate Very High Fire Hazard Severity Zones (VHFHSZs) in State Responsibility Areas (SRAs) and Local Responsibility Areas (LRAs). According to these maps, the UC Merced campus, including the project site, is not located within an SRA or VHFHSZ. However, the campus, including the project site, is mapped within a moderate FHSZ, which is the lowest-hazard zone in the FRAP (Cal Fire 2022).

Impact Discussion

a) Although hazardous materials, including fuel, lubricants, and cleaning products, would be used on the project site and construction staging area during project construction, compliance with local, state, and federal regulations would minimize risks associated with the routine transport, use, or disposal of hazardous materials during project construction. The operation of the proposed project would not involve the routine transport, use, or disposal of hazardous materials, other than cleaning products and maintenance materials. Due to the nature of these materials and the quantities that are typically used in residential buildings such as the one proposed, impacts with regard to the routine transport, use, or disposal of hazardous materials would be less than significant.

b) As discussed in Item (a) above, the transport of hazardous materials during project construction and operation would be conducted in accordance with all applicable local, state, and federal regulations. Due to the relatively small amounts of hazardous materials involved during construction and operation, 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.

c) There are no existing K-12 schools within one-quarter mile of the UC Merced campus, including the project site and construction staging area. Furthermore, the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. No impact would occur regarding this criterion.

d) The project site is not included on a list of active hazardous materials sites subject to corrective action compiled pursuant to Government Code Section 65962.5 (Cortese List). In addition, there are no known hazardous waste sites located within 1,000 feet of the

project site (DTSC 2022; SWRCB 2022). As a result, construction of the proposed project would not create a significant hazard to the public or the environment, and this impact would be less than significant.

e) The UC Merced campus, including the project site and construction staging area, is located several miles from the nearest airport, and thus the proposed project would not result in a safety hazard for people living on the project site or working in the construction staging area. No impact would occur with respect to this criterion.

f) The proposed project would be required to adhere to the Campus' Emergency Operations Plan and a Crisis Communications Plan. Construction of the proposed project and construction-related activities would occur within the boundary of the project site and construction staging area, and thus would not impede any emergency routes. There would be no impact with respect to this criterion.

g) As discussed above, the UC Merced campus, including the project site, is not located within an SRA or VHFHSZ. The use of construction equipment and the possible temporary on-site storage of fuels and/or other flammable construction chemicals could pose an increased fire risk resulting in injury to workers or the public during construction. However, contractors would be required to comply with hazardous materials storage and fire protection regulations, which would minimize potential for fire creation, and ensure that the impact associated with wildfire risk during construction would be less than significant.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

Similar to the proposed project, the construction and operation of development on and adjacent to the UC Merced campus would include the routine transport, use, disposal of hazardous materials—as well as the risk of accidental release of hazardous materials. The proposed project and cumulative development in the area would be required to comply with the same federal, state, and local regulatory requirements described above that would minimize and/or avoid hazards to the public or the environment through the routine transport, use, disposal, or accidental release of hazardous materials during construction and operation. In particular, teaching and research laboratories on the UC Merced campus would implement comprehensive programs to handle hazardous material, including hazardous waste (UC Merced 2009). As a result, considering the localized nature of effects, the temporal and geographic variations in occurrences, any emissions or incidents would be unlikely to combine to become cumulatively considerable. Similarly, any hazardous emissions or handling of hazardous materials within one-quarter mile of a school would be unlikely to combine to become cumulatively considerable for the same reasons. Therefore, the cumulative impact with respect to these topics would be less than significant.

With respect to wildfire, according to the current FRAP map for Merced County published by Cal Fire, there are no VHFHSZs within Merced County. There are moderate FHSZs located on or near the UC Merced campus. Cumulative development on and near the campus that would require the use of flammable substances or activities that could spark a wildfire would be required to comply with hazardous materials storage and fire protection regulations, which would minimize potential for fire creation, and ensure that the risk of wildland fires remains low. Therefore, impacts of the cumulative development on or near campus would be unlikely to combine to result in a significant cumulative impact with respect to wildfire, and the cumulative impact would be less than significant.

References

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Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
X. HYDROLOGY AND WATER QUALITY — Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
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:				
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 stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Environmental Setting

Surface Water

The UC Merced campus is located with the San Joaquin River drainage basin or "watershed." Principal tributaries to the San Joaquin River include the Stanislaus, Tuolumne, and Merced rivers. Key surface water resources in and around the campus include Cottonwood Creek, an intermittent creek that historically had its headwaters in the northeastern portion of the campus site and drained in a southwesterly direction towards Lake Road before it was modified by agricultural use, and construction of the Main Canal, Le Grand Canal, the Fairfield Canal, and Yosemite Lateral. The Main Canal diverts water from the Merced River and discharges it into Lake Yosemite, which is located to the north of the campus. Water from Lake Yosemite is conveyed to the south by the Le Grand and Fairfield Canals. Lake Yosemite and its canals are used primarily for irrigation and secondarily for flood control (UC Merced 2020).

Groundwater

Four groundwater subbasins within the larger San Joaquin Valley Groundwater Basin underlie Merced County. The largest is Merced Subbasin (Subbasin 5-22.-4), followed by Turlock and

Chowchilla subbasins, all to the east of the San Joaquin River, and the Delta-Mendota Groundwater subbasin to the west. The campus is located in the Merced subbasin (UC Merced 2020).

Groundwater from the Merced subbasin is used by the City of Merced (including UC Merced), other water districts and private users. The groundwater aquifer in the subbasin is not adjudicated, and because of this there are no defined legal pumping rights for the users and there are no legal constraints on groundwater pumping. As a result, pumping by users in the Merced subbasin has exceeded recharge in the past, and thus the subbasin has been operating under overdraft conditions for many years (UC Merced 2020).

A Groundwater Sustainability Plan (GSP) has been prepared for the Merced subbasin, as required by the Sustainable Groundwater Management Act, passed in 2014. The Merced Subbasin GSP lists priority projects and management actions that the GSAs will implement to reduce water demand, recharge the basin, and increase supply from non-groundwater sources (Merced Subbasin GSA 2019).

Flooding

The UC Merced campus, including the project site, is not located within the 100-year floodplain as designated by Federal Emergency Management Agency (FEMA). The Le Grand and Fairfield Canals that traverse the northern and central portions of the campus are owned and operated by Merced Irrigation District (MID). According to MID, the campus could experience flooding if the canal embankments failed or if the tops were overfilled due to excess volume of water. In addition, the levees could also fail due to erosion caused by seepage and animal burrowing (UC Merced 2020).

Impact Discussion

a) Construction of the proposed 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 the staging area and building site could also adversely affect receiving water quality. However, according to federal law, all construction projects that involve disturbance of more than one acre of land (or disturb less than one acre but are part of a larger project that in total disturbs more than one 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 would be contained and stored. Adherence to NPDES regulations would help to ensure that adverse impacts on water quality are minimized and avoided. Therefore, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, and this impact is less than significant.

b) Implementation of the proposed project would not result in substantial loss of groundwater recharge capability as the project site is mostly covered with pavement at the present time, and the project would not result in a substantial increase in impervious surfaces compared to existing conditions. Furthermore, storm water runoff from the developed project site would be collected and discharged into the detention basin to the south of the project site where some of the detained runoff would infiltrate. As a result, the impact with respect to substantially interfering with groundwater recharge would be less than significant.

The proposed project would increase demand for potable water, which would be drawn from the Merced subbasin by the City of Merced and supplied to the UC Merced campus. The subbasin is currently in a condition of overdraft. As discussed in Section XIX, Utilities and Service Systems, based on a water use factor of 31.4 gallons per capita per day and a population of 488 residents, the proposed project would demand approximately 15,323 gallons per day or 17.2 acre-feet per year. This estimate is considered conservative because it does not take into account the water efficient design of the proposed housing and landscaping and further reductions in project water use due to UC Merced's implementation of its Water Action Plan in compliance with the UC Sustainable Practices Policy. The City of Merced's 2020 Urban Water Management Plan (UWMP) states that it has an adequate water supply to meet water demands during normal, single-dry, and multi-dry years (City of Merced 2021). While the proposed project has not been accounted for in campus growth projections under the 2020 LRDP, its population has been accounted for in the City of Merced General Plan projections upon which the demand projections in the City's 2020 UWMP are based as the proposed project would not increase the overall enrollment at Merced College. Therefore, the project would not substantially decrease groundwater supplies or impede sustainable groundwater management of the Merced subbasin. For these reasons, the impact with respect to groundwater withdrawal would be less than significant.

c.i-iv) Storm water from developed surfaces within the developed campus 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. Storm water generated on the project site currently flows into the storm water detention basin located south of the site, and storm water generated on the project site after implementation of the proposed project would continue to flow into this basin. As the project site is mostly covered with pavement at the present time, implementation of the project is not expected to substantially increase the amount of impervious surface on the site, and thus would not substantially increase the amount of storm water generated on the project site that is conveyed to the detention basin serving the site. Therefore, storm water generated on the project site would not result in on- or off-site flooding, erosion, or siltation nor would it create or contribute runoff water which would exceed the capacity of existing storm water facilities. Finally, as discussed below in Item (d), the UC Merced campus, including the project site, is not located with a floodplain, and thus the proposed building would not impede or redirect flood flows. This impact would be less than significant.

d) The UC Merced campus, including the project site, is not within a 100-year floodplain as designated by FEMA. In addition, Lake Yosemite, which is located approximately 0.8 miles northwest 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. There would be no impact regarding this criterion.

e) As discussed above in Item (a), the proposed 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 (CVRWQCB 2018), which encompasses both the Sacramento River and San Joaquin River Basins. Furthermore, as discussed above in Item (b), the potential for the project to decrease groundwater supplies in the Merced subbasin is not substantial due to the size of the project and the water efficient design of the proposed housing and landscaping, and thus it would not conflict with or obstruct implementation of the Merced Subbasin GSP (Merced Subbasin GSA 2019). For these reasons, the impact with respect to this criterion would be less than significant.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

As discussed under Item (a), above, the proposed project would not violate any water quality standards or waste discharge requirements, nor would it substantially degrade water quality. In addition, as discussed above in Item (c.i-iv), the proposed project would not substantially alter existing drainage patterns and would utilize an existing drainage basin that has capacity to serve the project. Finally, as discussed under Item (d), the proposed 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 proposed project would not contribute to a cumulative impact with respect to these topics.

Concerning groundwater recharge, development on and adjacent to the campus would alter the conditions for groundwater recharge in the area as the amount of impervious surfaces would substantially increase compared to existing conditions. However, campus development under the 2020 LRDP would not substantially reduce recharge compared to existing conditions due to the limited suitability of soils on campus for recharge and the incorporation of green infrastructure and low-impact development strategies, including retention basins, into site design (UC Merced 2020). Furthermore, both the City of Merced and the County of Merced would require future development adjacent to the campus to minimize impervious surfaces and to collect and discharge runoff from new impervious surfaces into stormwater detention basins that are either existing or built as part of new development. Therefore, the cumulative impact with respect to recharge would be less than significant.

Concerning groundwater withdrawal, development on and adjacent to the campus would solely rely on groundwater for its potable water supply. As discussed above in Item (b), the City of Merced's 2020 UWMP states that the City has an adequate water supply to meet water demands during normal, single-dry, and multi-dry years. As the plan accounts for future demand within the City's Sphere of Influence (SOI)/Specific Urban Development Plan (SUDP) area, future water demand on and adjacent to the campus is accounted for in the UWMP. Furthermore, a GSP for the Merced subbasin has been prepared which includes priority projects and management actions to reduce water demand, recharge the basin, and increase supply from non-groundwater sources. For these reasons, the cumulative impact with respect to groundwater withdrawal would be less than significant.

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Land Use and Planning

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XI. LAND USE AND PLANNING — Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☒	☐

Environmental Setting

The campus consists primarily of developed land, grasslands used for seasonal grazing, and land under irrigated pasture. The campus core, located on Lake Road near its intersection with Bellevue Road, contains academic, research, student housing, athletic, administrative, and other uses supporting academic operations (UC Merced 2020a). Grassland and irrigated pasture are located to the east and south of the developed campus.

Lake Yosemite Regional Park is located to the northwest of the UC Merced campus, and lands to the north and east of the campus are occupied by rolling grasslands. South of the UC Merced campus, lands are under agricultural production, and to the west of campus, lands consist of rolling grasslands interspersed with rural residential uses (UC Merced 2020b).

In July of 2024, the campus along with a two-mile strip of Bellevue Road were annexed into the City of Merced.

Physical development on the UC Merced campus is governed by the 2020 UC Merced Long Range Development Plan (LRDP), which identifies land use designations to support anticipated campus growth and includes a land use map to inform the pattern of development. The current LRDP land use designation for the project site is Campus Mixed Use (CMU). Land uses allowed under this designation include academic, instructional and research laboratories, library and learning facilities research archive facilities, student housing including both undergraduate and graduate students, student support services, university affiliated dining and retail, athletic and recreational facilities, administrative, childcare, service facilities, performance and cultural facilities, clinical facilities, research institutes, conference facilities, services supporting academic operations, and alumni and conference centers (UC Merced 2020a).

Impact Discussion

a) The project site is located within the existing UC Merced campus. 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. There would be no impact regarding this criterion.

b) The campus was annexed by the City of Merced in July of 2024; however, the University 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 proposed 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 be in an area that is designated CMU, which allows for student housing. The siting and design of the proposed project would also be required to be consistent with the 2020 LRDP and the Physical Design Framework of the UC Merced campus. Therefore, the project would not conflict with the 2020 LRDP, and this impact would be less than significant.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

Anticipated future development on and adjacent to the UC Merced campus would substantially change land uses on and in the vicinity of the campus. The UC Merced campus was annexed by the City of Merced in July 2024 via a road extension along Bellevue Road. The area to the south was also annexed by the City of Merced in September 2024 and the area to the west of campus is located within the City of Merced's SOI)/SUDP area. Thus, the City has anticipated growth in ~~this~~ these areas. ~~It is anticipated that the City of Merced will file an application to annex the UC Merced campus in 2023. The timing as to when the annexation will be approved is unknown at this time. UC Merced campus is anticipated to be annexed by the City via a road extension along Bellevue Road and lands to the south and west of would be annexed to the City shortly thereafter.~~ As a result, all future development to the south and west of the UC Merced campus ~~would~~ will be reviewed for consistency with the City's General Plan and Zoning Ordinance, in accordance with the requirements of CEQA, the State Planning and Zoning Law, and the State Subdivision Map Act, all of which require findings of plan and policy consistency prior to approval of entitlements for development. In addition, growth on the UC Merced campus would be required to adhere to land use designations and policies in the 2020 LRDP. As discussed above, the proposed project's student housing use is consistent with the 2020 LRDP's CMU land use designation. For these reasons, the proposed project and other development would not conflict with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect, and the cumulative impact with respect to land use and planning would be less than significant.

References

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Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XII. MINERAL RESOURCES — 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Environmental Setting

No mineral resource zones and/or delineated mineral recovery sites are located on the UC Merced campus (UC Merced 2009).

Impact Discussion

a-b) No portion of the UC Merced campus, including the project site and construction staging area, is designated as a mineral resource zone, and no known or potential mineral resources are located on the campus, including the site and construction staging area. Therefore, development on the project site and use of the construction staging area would not impede extraction of mineral resources or result in the loss of availability of a known mineral resource. There would be no impact with respect to these criteria.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

As discussed in Section XI, Land Use and Planning, the area to the south and west of the UC Merced campus is located with the City of Merced's SOI/SUDP area, and the City has anticipated growth in this area. The city of Merced does not contain any mineral resources that require managed production. Minor aggregate production occurs west and north of the city, but economic deposits of aggregate minerals are not mined within the immediate vicinity of the SOI/SUDP area. Furthermore, no Mineral Resource Zones or mineral resource recovery sites exist within the city of Merced or in the area designated for future expansion in the SOI/SUDP area (City of Merced 2011). As discussed above, no portion of the UC Merced campus, including the project site, is designated as a mineral resource zone, and no known or potential mineral resources are located on the campus, including the site. Therefore, the proposed project and other development would not result in the loss of availability of a known mineral resource, nor would they result in the loss of availability of a locally important mineral resource recovery site. No cumulative impact would occur with respect to mineral resources.

References

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Noise

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XIII. NOISE — 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?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
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 two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Environmental Setting

Noise Terminology

Noise is generally defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level), which is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing and 120 dB to 140 dB corresponding to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements.

When a new noise is introduced to an environment, the human reaction can be predicted by comparing the new noise to the ambient noise level, which is the existing noise level comprised of noise from all sources in a given location. In general, the more a new noise exceeds the ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur (Caltrans 2013).

- Except in carefully controlled laboratory experiments, a change of 1-dB cannot be perceived.

- Outside of the laboratory, a 3-dB change is considered a just-perceivable difference.
- A change in level of at least 5-dB is required before any noticeable change in human response would be expected.
- A 10-dB change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

The perceived increases in noise levels described above are applicable to both mobile and stationary noise sources. These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion; hence, the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise exposure is a measure of noise over a period of time. Noise level is a measure of noise at a given instant in time. Community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. What makes community noise constantly variable throughout a day, besides the slowly changing background noise, is the addition of short duration single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual receptor. These successive additions of sound to the community noise environment vary the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts.

This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{dn}: A 24-hour day and night A-weighted noise exposure level, which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dB to take into account the greater annoyance of nighttime noises.

CNEL: The Community Noise Equivalent Level (CNEL); similar to L_{dn}, the CNEL adds a 5-dB "penalty" for the evening hours between 7:00 p.m. and 10:00 p.m. in addition to a 10-dB penalty between the hours of 10:00 p.m. and 7:00 a.m.

L_{eq}: The energy-equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The L_{eq} is the constant sound level, which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{max}: The instantaneous maximum noise level for a specified period of time.

Vibration Terminology

As described in the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Manual, ground-borne vibration can be a serious concern for nearby neighbors, causing buildings to shake and rumbling sounds to be heard (FTA 2018). In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains; buses and heavy trucks on rough roads; and construction activities such as blasting, sheet pile-driving, and operating heavy earth-moving equipment.

Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal, which is measured in inches per second. The PPV is most frequently used to describe vibration impacts on buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to express RMS. The decibel notation acts to compress the range of numbers required to describe vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration assessment include structures (especially older masonry structures), people who spend a lot of time indoors (especially residents, students, the elderly and sick), and vibration-sensitive equipment such as hospital analytical equipment and equipment used in computer chip manufacturing.

The effects of ground-borne vibration include the movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction, which would not occur under the proposed project. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin.

Existing Conditions

Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication, and can cause physiological and psychological stress and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hospitals, and nursing homes are considered to be the most sensitive to noise. Places such as churches, libraries, and cemeteries (where people tend to pray, study, and/or contemplate) are also sensitive to noise. Commercial and industrial uses are considered the least noise sensitive.

The proposed project is located within the City ~~County~~ of Merced, with existing residences on the southwest side of Lake Road and the southside of Bellevue Road as close as 1,820 feet from the project site and 2,100 feet from the construction staging area. Additionally, the existing El Portal

Student Housing is located on the campus approximately 100 feet from the project site and about 600 feet from the construction staging area.

Existing Noise Setting

The noise environment surrounding the project site is influenced by vehicular traffic along Bellevue Road and Lake Road. To characterize the noise environment within the surrounding area, one long-term (24 hours) noise measurement was conducted, and the resulting data are presented in **Table NOI-1**, *Long-term Ambient Noise Level Data in the Project Area*. Long-term noise monitoring location was selected based on representation of the closest noise-sensitive receptors (off-campus residence) to the project site.

TABLE NOI-1
LONG-TERM AMBIENT NOISE LEVEL DATA IN THE PROJECT AREA

Measurement Location	Day-Night Noise level (DNL)	Noise Levels in dBA	
		Daytime hourly average, L_{eq}	Nighttime hourly average, L_{eq}
LT-1 Adjacent to 2897 Bellevue Road, approximately 2,100 feet west of proposed development	69	67	61

SOURCE: Environmental Science Associates, 2022 (Appendix D).

In addition, existing roadside noise levels along roadway segments near the project site were modeled to provide estimates of existing weekday noise levels along the roadway segments near the project site. **Table NOI-2**, *Existing Traffic Noise Along Roads in the Project Vicinity*, presents existing roadside noise levels during the weekday a.m. peak commute hour. These modeled noise levels reflect only the noise generated by traffic on the identified roadway segments; they do not include other sources in the area, such as rail and highway noise where these other sources are nearby.

TABLE NOI-2
EXISTING TRAFFIC NOISE ALONG ROADS IN THE PROJECT VICINITY

Roadway Segment	Existing Hourly (dBA)
Weekday Peak-Hour Noise Levels	
Bellevue Road from Golf Road to Lake Road	70.3
Lake Road from Bellevue Road to East Cardella Road	66.7

NOTE: dBA = A-weighted decibels

SOURCE: Traffic data compiled by Fehr & Peers in 2022, and noise modeling performed by Environmental Science Associates in 2022 (Appendix D).

Regulatory Framework

The University of California, a constitutionally created State entity, is not subject to municipal regulations of surrounding local governments for uses on property owned or controlled by the University that are in furtherance of the University's education purposes. However, the University may consider, for coordination purposes, aspects of local plans and policies for the

communities surrounding a UC campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts. Although the University is not subject to local standards and ordinances, the University has elected to use the County's noise standards and construction noise ordinance to evaluate the potential for the proposed project to adversely affect ambient noise levels in the vicinity of the campus.

2030 Merced County General Plan

The following Goals and Policies from the County's 2030 General Plan, Health and Safety Element: Noise, are relevant to the assessment of noise effects associated with the proposed project.

Goal HS-7: Protect residents, employees, and visitors from the harmful and annoying effects of exposure to excessive noise.

Policy HS-7.1: Noise Standards for New Land Uses (RDR). Require new development projects to meet the standards shown in Tables HS-1 and HS-2, at the property line of the proposed use, through either project design or other noise mitigation techniques.

Policy HS-7.3: Existing Rural Sources. Discourage new noise sensitive land uses in rural areas with authorized existing noise generating land uses. [Source: Existing Merced County GP, Revised Policy NOI.2.4]

Policy HS-7.5: Noise Generating Activities. Limit noise generating activities, such as construction, to hours of normal business operation.

Policy HS-7.6: Multi-Family Residential Noise Analysis. Require noise analyses be prepared for proposed multi-family, town homes, mixed-use, condominiums, or other residential projects where floor ceiling assemblies or party- walls shall be common to different owners/occupants to assure compliance with the State of California Noise Insulation Standards.

Policy HS-7.7: Noise Impacted Residential Area Monitoring. Consider any existing residential area "noise impacted" if the exposure to exterior noise exceeds the standards shown in Table HS-2. Identify and evaluate potential noise impacted areas and identify possible means to correct the identified noise/land use incompatibilities.

Policy HS-7.8: Project Design. Require land use projects to comply with adopted noise standards through proper site and building design, such as building orientation, setbacks, natural barriers (e.g., earthen berms, vegetation), and building construction practices. Only consider the use of soundwalls after all design-related noise mitigation measures have been evaluated or integrated into the project or found infeasible.

Policy HS-7.9: Transportation Project Construction/Improvements. Require transportation project proponents to prepare all acoustical analysis for all roadway and railway construction projects in accordance with Policy HS-7.2. Consider noise mitigation measures to reduce traffic and/or rail noise levels to comply with Table HS-1 standards if pre-project noise levels already exceed the noise standards of Table HS-1 and

the increase is significant [General Plan Table HS-1 is reproduced below as **Table NOI-3**]. The County defines a significant increase as follows:

Pre-Project Noise Environment (Ldn)	Significant Increase
Less than 60 dB	5+ dB
60 - 65 dB	3+ dB
Greater than 65 dB	1.5+ dB

TABLE NOI-3
NOISE STANDARDS FOR NEW USES AFFECTED BY TRAFFIC, RAILROAD, AND AIRPORT NOISE

New Land Use	Sensitive [a] Outdoor Area – Ldn	Sensitive Interior [b] Area – Ldn	Notes
All Residential	65	45	c
Transient Lodging	65	45	c,e
Hospitals & Nursing Homes	65	45	c,d,e
Theaters & Auditoriums	--	35	d
Churches, Meeting Halls, Schools, Libraries, etc.	65 65	40 40	d d
Office Buildings	65	45	d
Commercial Buildings	--	50	d
Playground, Parks, etc.	70	--	
Industry	65	50	d

NOTES:

a. Sensitive Outdoor Areas include primary outdoor activity areas associated with any given land use at which noise-sensitivity exists and the location at which the County's exterior noise level standards are applied.
b. Sensitive Interior Areas includes any interior area associated with any given land use at which noise- sensitivity exists and the location at which the County's interior noise level standards are applied. Examples of sensitive interior spaces include, but are not limited to, all habitable rooms of residential and transient lodging facilities, hospital rooms, classrooms, library interiors, offices, worship spaces, theaters. Interior noise level standards are applied within noise-sensitive areas of the various land uses with windows and doors in the closed positions.
c. Railroad warning horn usage shall not be included in the computation of Ldn.
d. Only the interior noise level standard shall apply if there are no sensitive exterior spaces proposed for these uses.
e. Since hospitals are often noise-generating uses, the exterior noise level standards are applicable only to clearly identified areas designated for outdoor relaxation by either hospital staff or patients.

Policy HS-7.10: Aircraft Noise. Prohibit new noise-sensitive development within the projected future 60 dB Ldn noise contour of any public or private airports.

Policy HS-7.12: New Project Noise Mitigation Requirements. Require new projects to include appropriate noise mitigation measures to reduce noise levels in compliance with the Table HS-2 standards within sensitive areas. If a project includes the creation of new non-transportation noise sources, require the noise generation of those sources to be mitigated so they do not exceed the interior and exterior noise level standards of Table HS-2 at existing noise-sensitive areas in the project vicinity. However, if a noise-generating use is proposed adjacent to lands zoned for residential uses, then the noise generating use shall be responsible for mitigating its noise generation to a state of compliance with the standards shown in Table HS-2 at the property line of the generating use in anticipation of the future residential development [General Plan Table HS-2 is reproduced below as **Table NOI-4**].

TABLE NOI-4
NON-TRANSPORTATION NOISE STANDARDS MEDIAN (L50) / MAXIMUM (LMAX) [a]

Outdoor Area [b]			Interior [c] Day or Night	Notes
Receiving Land Use	Daytime	Nighttime		
All Residential	55 / 75	50 / 70	35 / 55	
Transient Lodging	55 / 75	--	35 / 55	d
Hospitals & Nursing Homes	55 / 75	--	35 / 55	e,f
Theaters & Auditoriums	--	--	30 / 50	f
Churches, Meeting Halls, Schools, Libraries, etc.	55 / 75	--	35 / 60	f
Office Buildings	60 / 75	--	45 / 65	f
Commercial Buildings	55 / 75	--	45 / 65	f
Playground, Parks, etc.	65 / 75	--	--	f
Industry	60 / 80	--	50 / 70	f

NOTES:

a. These standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards in this table, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.
b. Sensitive Outdoor Areas include primary outdoor activity areas associated with any given land use at which noise-sensitivity exists and the location at which the County's exterior noise level standards are applied.
c. Sensitive Interior Areas includes any interior area associated with any given land use at which noise- sensitivity exists and the location at which the County's interior noise level standards are applied. Examples of sensitive interior spaces include, but are not limited to, all habitable rooms of residential and transient lodging facilities, hospital rooms, classrooms, library interiors, offices, worship spaces, theaters. Interior noise level standards are applied within noise-sensitive areas of the various land uses with windows and doors in the closed positions.
d. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
e. Since hospitals are often noise-generating uses, the exterior noise level standards are applicable only to clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
f. The outdoor activity areas of these uses (if any) are not typically used during nighttime hours.
g. Where median (L50) noise level data is not available for a particular noise source, average (Leq) values may be substituted for the standards of this table provided the noise source operates for at least 30 minutes. If the source operates less than 30 minutes the maximum noise level standards shown shall apply.

Merced County Code – Chapter 10.60 Noise Control

Noise generated by the project and experienced at nearby residential properties would be subject to the County Code noise limits. The following text presents the Merced County Code noise level limits as defined in County Code Chapter 10.60 Noise Control.

A. No person shall cause, suffer, allow, or permit the operation of any sound source on private property in such a manner as to create a sound level that results in any of the following, when measured at or within the real property line of the receiving property:

1. Exceeds the background sound level by at least ten (10) dBA during daytime hours (seven a.m. to ten p.m.) and by at least five dBA during nighttime hours (ten p.m. to seven a.m.). The background sound level for purposes of this section shall be determined as set forth in Section 10.60.060; or

2. Exceeds sixty-five (65) dBA Ldn on residential real property or seventy (70) dBA Ldn on nonresidential real property; or

3. Exceeds seventy-five (75) dBA Lmax on residential real property or eighty (80) dBA Lmax on nonresidential real property.

B. The following are exempt from the sound level limits of Section 10.60.030(A):

1. Noise from emergency signaling devices;

2. Noise from an exterior burglar alarm of any building provided such burglar alarm shall terminate its operation within five minutes of its activation;

3. Noise from domestic power tools, lawn mowers, and agricultural equipment when operated between seven a.m. and eight p.m. on weekdays and between eight a.m. and eight p.m. on weekends and legal holidays, provided they generate less than eighty-five (85) dBA at or within any real property line of a residential property;

4. Sound from church bells and chimes when a part of a religious observance or service; Noise from construction activity, provided that all construction in or adjacent to urban areas shall be limited to the daytime hours between seven a.m. and six p.m., and all construction equipment shall be properly muffled and maintained.

C. When the source being analyzed is a stereo system with low frequency signals as part of its output, the stereo shall not cause a C-weighted level of ten (10) dB or greater above the C-weighted ambient level at a distance of ten (10) feet from the source, or the complainant's real property line, whichever is greater. (Ord. 1869 § 2, 2009; Ord. 1726 § 1, 2004).

Impact Discussion

a) Construction of the proposed project would result in a temporary increase in ambient noise levels while occupancy of the proposed project would result in a permanent increase in ambient noise levels. A discussion of the effect of these noise increases on nearby sensitive receptors is provided below.

Construction

Construction of the proposed project would occur over a period of approximately 13 months starting in Spring 2024. Project construction would result in temporary increases in ambient noise levels. Onsite construction activities would require the use of heavy construction equipment (e.g., excavator, loader, crane) that would generate varying noise levels. Offsite construction noise sources would consist of passing trucks and other construction-related vehicles. **Table NOI-5**, *Typical Maximum Noise Levels from Construction Equipment*, shows typical noise levels produced by various types of construction equipment that would operate during the construction of the proposed project.

TABLE NOI-5
TYPICAL MAXIMUM NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, L_{max} at 50 feet)
Backhoe	78
Excavator	81
Compactor	83
Air Compressor	78
Dozer	82
Grader	85
Paver	77
Roller	80
Front-End Loader	79
Truck	76
Pile Driver	101

NOTES:
dBA = A-weighted decibels; L_{max} = maximum, instantaneous noise level experienced during a given period of time
These are maximum field measured values at 50 feet as reported from multiple samples.
SOURCE: Federal Highway Administration, *Roadway Construction Noise Model User Guide*, 2006.

Concerning off-campus sensitive receptors, residences on the southwest side of Lake Road and the southside of Bellevue Road are located more than one quarter mile away from the project site and construction staging area. Consistent with the general assessment methodology of the FTA, the two noisiest pieces of construction equipment (grader and dozer) listed in Table NOI-5 were assumed to operate simultaneously. Using the Roadway Construction Noise Model of the Federal Highway Administration, the resultant noise level at the nearest on-campus receptor would be 52 dBA (see Appendix D) If pile driving is determined to be a necessary component of foundation construction, pile driving could generate maximum noise levels of 70 dBA and hourly average noise levels of 63 dBA at the nearest off-campus receptor. As a result, construction noise levels at these off-campus receptors would be well below the County standard for residential uses found in Tables NOI-4 and NOI-5. Furthermore, daytime construction noise is exempt from the County's Ordinance and would result in a less-than-significant impact. To further reduce this impact, Mitigation Measure NOI-1 set forth below would be applied to the project.

> **MM NOI-1:** UC Merced shall develop and implement a construction noise mitigation program for the proposed project that includes but is not limited to the following:
>
> - Construction activities shall be restricted to the hours of 7:00 a.m. and 6:00 p.m. 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.
- 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 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 construction activities, such as 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 project construction.

Concerning on-campus sensitive receptors, the student housing is located to the northeast approximately 100 feet from the project site and about 600 feet from the construction staging area. Consistent with the general assessment methodology of the FTA, the two noisiest pieces of construction equipment (grader and dozer) listed in Table NOI-5 were assumed to operate simultaneously. Using the Roadway Construction Noise Model of the Federal Highway Administration, the resultant noise level at the nearest on-campus receptor would be 77 dBA (see Appendix D). If pile driving is determined to be a necessary component of foundation construction, pile driving could generate maximum noise levels of 95 dBA and hourly average noise levels of 88 dBA at the nearest on-campus receptor. However, implementation of Mitigation Measure NOI-1 above, particularly the stipulation that the loudest construction activities, such as pile driving, shall be scheduled during summer, Thanksgiving, winter, and spring breaks when fewer people would be disturbed by construction noise, would reduce the construction noise levels at the on-campus sensitive receptors to a less-than-significant level.

Operation

Traffic

The proposed project is not expected to cause a substantial permanent noise level increase. The primary source of noise during project operation would be from the vehicle traffic generated by project residents. These trips would be distributed on the roadway network leading to the UC Merced campus, including the project site, and would increase associated traffic noise levels along these roadway segments.

Policy HS-7.9 of the County's General Plan identifies a significant noise increase would occur if a project would increase the noise levels by 5 dBA or more where ambient noise levels are below the "normally acceptable" noise level standard and by 3 dBA or more where ambient noise levels equal or exceed the "normally acceptable" noise level. The "normally acceptable" outdoor noise level for residential land uses is 65 dBA per the County's General Plan. Existing traffic noise levels along roadway segments that would be used to access the UC Merced campus, including the project site, are above 65 dBA. Based on traffic noise algorithms from the Federal Highway Administration's Traffic Noise Model, the increase in traffic noise level over existing noise levels along roadway segments affected by the proposed project's traffic would be 0.4 dBA or less. The proposed project's contribution to the noise level increase was determined to be less than significant along all roadway segments affected by the proposed project, as shown in **Table NOI-6**, *Traffic Noise Increases along Roads in the Project Vicinity*. Other roadway segments would not experience an increase in traffic volumes enough to lead to an increase in associated noise level.

TABLE NOI-6
TRAFFIC NOISE INCREASES ALONG ROADS IN THE PROJECT VICINITY

Roadway Segment	Existing	Applicable Increase Threshold (dB)	Existing plus Full Buildout of Project	dBA Difference	Significant Increase?
Weekday Peak-Hour Noise Levels					
Bellevue Road from Golf Road to Lake Road	70.3	1.5	70.6	0.3	No
Lake Road from Bellevue Road to East Cardella Road	66.7	1.5	67.1	0.4	No

NOTES:
dB = decibels; dBA = A-weighted decibels; NA = not applicable

SOURCE: Traffic data compiled by Fehr & Peers in 2022, and modeling performed by Environmental Science Associates in 2022 (Appendix D).

Stationary Sources

On-campus noise-sensitive receptors, including student housing and academic buildings on the campus, could be exposed to excessive noise associated with proposed project during 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 project. 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-campus receptors are not expected to be exposed to noise levels generated by stationary sources in excess of the standards for noise-sensitive uses with implementation of the proposed project. Off-campus receptors would be located over 1,800 feet from the proposed housing building and at this distance, noise from stationary mechanical equipment would be reduced to below background levels and the project would result in a less than significant stationary source noise impact.

b) Vibration can be interpreted as energy transmitted as waves through the ground. These energy waves generally dissipate with distance from the vibration source. Since energy is lost during the transfer of energy from one particle to another, vibration attenuates rapidly with distance. Operations and maintenance of the proposed project would not include any sources of vibration that would be considered excessive. Ground-borne vibration and noise associated with some construction activities, including the use of pile drivers, blasting, and vibratory rollers can cause excessive vibration. This analysis conservatively assumes the potential for building foundations to require installation of piles that could require an impact pile driver.

A threshold of 0.5 inch/second PPV is used to assess damage risk for buildings of standard construction (FTA 2018). No existing historic structures that would be potentially vulnerable to vibration are located in the immediate vicinity of the project site such that any damage related to ground-borne vibration from construction activities would occur.

Impact pile drivers are documented to typically generate a vibration level of 0.65 inch/second, peak particle velocity (ppv), at a distance of 25 feet. (FTA 2018). Resultant vibration levels at the nearest building (El Portal Student Housing) at a distance of 100 feet would be reduced to 0.08 inches/second, ppv, and therefore would not be anticipated to result in substantial structural effects from vibration. While vibration from pile driving can affect sensitive equipment operations at existing campus facilities, such as laboratories, the distance between the project site and academic buildings that may house such equipment (over 1,000 feet) is sufficient to preclude potential vibration impacts to equipment operations.

Another vibration descriptor is known as vibration decibels or VdBs. This metric is generally used when evaluating human response to vibration. The background vibration velocity levels in residential areas are typically 50 VdB or lower, and the threshold of perception for humans is approximately 65 VdB. A vibration level of 85 VdB in a residence can result in strong annoyance (FTA 2018). Impact pile drivers are documented to typically generate a vibration level of 104 VdB at a distance of 25 feet. (FTA 2018). Resultant vibration levels at the nearest building (El Portal Student Housing) at a distance of 100 feet would be approximately 86 VdB and, therefore, but would just exceed the threshold for an annoyance impact. However, with the implementation of Mitigation Measure NOI-2 below, this impact would be reduced to a less than significant level.

> **MM NOI-2:** Drilled piles will be used where geological conditions permit their use. For any impact pile driving activities occurring within 100 feet of student

housing, limit impact-pile driving activities to daytime hours to avoid sleep disturbance at residential housing. 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.

c) The closest airports are Merced Castle Airport, approximately 8 miles west of the campus in Atwater, and Merced Regional Airport, about 7 miles southwest of the campus in Merced. The campus, including the project site, is well outside of the 60 CNEL noise contours for either of these airports (MCALUC 2012) and, therefore, project residents would not be exposed to excessive noise levels generated by aircraft, and there would be no impact with respect to this criterion.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

Construction

The geographic scope of analysis for cumulative construction noise and vibration impacts encompasses sensitive receptors within approximately 600 feet of the project site.[3] Beyond 600 feet, the contributions of noise from other projects would be greatly attenuated through both distance and intervening structures and their contribution would be expected to be minimal.

The only cumulative construction project within 600 feet of the project site would be the Medical Education Building (MEB) project, which is programed to be developed as part of the UC Merced LRDP. Construction of the MEB project is currently slated to occur over a 36-month period starting in September of 2023 (UC Merced 2022).

Construction noise impacts of the MEB project were found to be less than significant because construction would only occur during daytime hours and would therefore be consistent with the County's noise ordinance. Because construction of both projects would only occur during the exempt daytime hours, the cumulative construction noise impact would be less than significant. It is further noted that the MEB project is required to implement 2020 LRDP Mitigation Measure NOI-3, which requires a number of noise control measures including consideration of the erection of temporary noise barriers where project activity is unavoidably close to noise-sensitive receptors and scheduling of the loudest construction activities, such as demolition and pile driving

[3] This screening threshold distance was developed based on stationary source noise attenuation equations (Caltrans 2013a) and the combined noise level generated by typical construction phases for a given project (assuming multiple pieces of equipment) at a distance of 50 feet. Using the attenuation equations, the maximum noise level of 89 A-weighted decibels (dBA) for both excavation and finishing would diminish to below 70 dBA (speech interference) at 600 feet. A receptor experiencing noise levels of 89 dBA from two adjacent construction sites would experience a cumulative noise level of 91 dBA (the acoustical sum of 89 dBA plus 89 dBA), which would still be below 70 dBA at 600 feet which, hence, is used as the geographic scope for approaching a significant cumulative impact.

during summer, Thanksgiving, winter, and spring breaks when fewer people would be disturbed by construction noise.

Potential cumulative construction vibration impacts would also be limited to construction projects that are located in the immediate project site. Architectural damage impacts to adjacent buildings are not a concern in the cumulative scenario because the project site is sufficiently distant from these cumulative projects so as to not cumulatively combine to result in architectural damage impacts. Furthermore, none of the cumulative projects would be constructed during nighttime hours and would, therefore, not result in human annoyance or sleep disturbance impacts from vibration. For these reasons, the cumulative construction vibration impact would be less than significant.

Operation

The operational noise impacts of the proposed project would result primarily from increased traffic on the local roadway network. Cumulative (year 2040) plus project traffic data were used to estimate cumulative operational noise increases. The 2040 traffic data inherently include City growth projections, including growth on the UC Merced campus and on the nearby University Vista and VST Specific Plan projects.

The significance of cumulative impacts related to traffic noise levels is determined using a two-step process. If a cumulative impact is identified, the second step is to evaluate whether the contribution of the project to roadside noise levels would be cumulatively considerable.

The roadway segments analyzed and the results of the noise increases resulting from modeling are shown in **Table NOI-7**, *Cumulative Traffic Noise Increases along Roads in the Project Vicinity*, for 2040 cumulative plus weekday p.m.[4] full buildout of the project's mixed uses.

TABLE NOI-7
CUMULATIVE TRAFFIC NOISE INCREASES ALONG ROADS IN THE PROJECT VICINITY

Roadway Segment	Existing	Applicable Increase Threshold (dB)	Cumulative (2040) plus Full Buildout of Project	dBA Difference	Significant Increase?
Weekday Peak-Hour Noise Levels					
Bellevue Road from Golf Road to Lake Road	70.3	1.5	75.2	4.9	**Yes**
Lake Road from Bellevue Road to East Cardella Road	66.7	1.5	57.4	-9.3 [a]	No

NOTES:
dB = decibels; dBA = A-weighted decibels; NA = not applicable
a. Noise reduction is the result of the realignment of Lake Road as Campus Parkway Extension.

SOURCE: Traffic data compiled by Fehr & Peers in 2022, and modeling performed by Environmental Science Associates in 2022 (Appendix D).

4 The peak hour was used to represent the maximum period of traffic generation and associated noise generated by the project.

As shown in Table NOI-7, significant cumulative traffic noise impacts would occur along one of the two roadways analyzed. It should be noted that the reconfiguration of Lake Road as the new Campus Parkway Extension will realign the roadway further from the existing receptors west of Lake Road such that future noise levels will decrease for those receptors.

Consequently, the cumulative roadway noise impact on Bellevue Road was examined to estimate the cumulative contribution of the proposed project by comparing the noise levels of the cumulative (2040) plus project scenario to the cumulative no project scenario. **Table NOI-8**, *Project Contribution to Cumulative Traffic Noise Increases along Roads in the Project Vicinity*, presents the results of this comparison. Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived. Consequently, a cumulatively considerable contribution would reasonably be more than 1 dBA. As shown in Table NOI-8, the contribution of the proposed project to the predicted significant cumulative roadway noise impact along Bellevue Road would be 0.1 dBA. Therefore, the proposed project would not contribute considerably to the cumulative noise impact which would almost entirely be the result of other cumulative growth in the area, and thus the project's cumulative impact with respect to operational traffic would be less than significant.

TABLE NOI-8
PROJECT CONTRIBUTION TO CUMULATIVE TRAFFIC NOISE INCREASES ALONG ROADS IN THE PROJECT VICINITY

Roadway Segment	Cumulative (2040) No Project	Cumulative (2040) plus Full Buildout of Project	dBA Difference [a]	Cumulatively Considerable Increase?
Weekday Peak-Hour Noise Levels				
Bellevue Road from Goff Road to Lake Road	75.1	75.2	0.1	No

NOTES:
dB = decibels; dBA = A-weighted decibels; NA = not applicable
a. Differences may vary from reported values due to rounding.

SOURCE: Traffic data compiled by Fehr & Peers in 2022, and modeling performed by Environmental Science Associates in 2022 (Appendix D).

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Population and Housing

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XIV. POPULATION AND HOUSING — 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)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental Setting

The UC Merced campus is located in the City of Merced (annexed in July 2024) ~~in unincorporated~~ within Merced County, which has a current (2022) population of 284,338 residents, with 90,883 residents residing in the unincorporated county and 193,455 residents residing in one of six incorporated cities in the county~~. The campus is located approximately two miles to the northeast of the city of Merced, within the City's SOI/SUDP area.~~ The City of Merced has a current (2022) population of 89,058 residents (DOF 2022). It is estimated that by 2035, Merced County and the City of Merced will have a population of 357,496 residents and 109,986 residents, respectively (MCAG 2018).

According to the 2020 LRDP, UC Merced campus population expected to increase by 6,431 persons between 2020 and 2030 for a total population of 17,411 students, faculty and staff (UC Merced 2020).

Impact Discussion

a) The proposed project was not included in growth projections for the campus under the 2020 LRDP. About 60 percent of the residents of the project would consist of transfer students enrolled at UC Merced, and about 40 percent of the residents would be students enrolled at Merced College at the time that they reside in the project housing. The proposed project would not increase the overall enrollment at Merced College. Students who enroll in community colleges typically graduate from local high schools and are already living in the local area when they begin attending college. As such, the proposed project would not attract new residents to the Merced area and add population that has not been accounted for in local land use plans. The UC Merced transfer students who would reside in the project are already included in the UC Merced on-campus population projections through 2030 that form the basis of the 2020 LRDP. Furthermore, the proposed project would not extend infrastructure or roads into an area that has not previously been accessible or developed. Vehicular access to the project site would occur from Bellevue Road, which is an existing entry way to the UC Merced campus. As discussed in Section XIX, Utilities and Services Systems, the proposed project would connect to existing campus water, wastewater, and energy utilities located adjacent to the project site. For these reasons, the proposed project would not induce substantial unplanned population growth in the area, either directly by housing new population that

was not accounted for in local land us plans, or indirectly, by extending roads and/or infrastructure to the project site, and this impact is less than significant.

b) The project site is currently a parking lot, and thus construction of the proposed project would not displace any existing households necessitating the construction of replacement housing elsewhere. There would be no impact with respect to this criterion.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

Cumulative development, including growth on the UC Merced campus and to the south and west of the campus, would result in population growth. Substantial unplanned growth is increased population for which infrastructure, services, and housing have not been planned. So long as the cumulative population and housing conditions are within the local growth projections, there would be no significant adverse growth impact related to population and housing.

The City of Merced Vision 2030 General Plan accounted for growth on the UC Merced campus and its vicinity as the area was ~~is~~ within the City's SOI/SUDP area at the time it was prepared. The City of Merced annexed the UC Merced campus in July of 2024 and the area south of the campus (VST Development) in September of 2024. In fact, the growth projections in the general plan assumed that enrollment on the UC Merced campus would increase from approximately 2,000 students in 2007-08 to 25,000 students by 2030 (UC Merced 2009), which has since been revised to 15,000 students by 2030 (UC Merced 2020). Growth projections in the Merced Vision 2030 General Plan also accounted for growth to the west and south of the UC Merced campus, as both the University Vista project and the VST SP project were ~~are~~ located within the City's SOI/SUDP area at the time of preparation. The City of Merced prepared an addendum to the General Plan EIR, which evaluated the annexation of the campus into the City and found that the annexation would not result in any new or substantially severe environmental impacts from those identified in the City's General Plan EIR. Additionally, the annexation does not affect the campus' projected population numbers. For these reasons, development on the UC Merced campus and to the south and west of campus would not induce unplanned growth in the area. As discussed above in Item (a), the proposed project would not add population to the area that has not been accounted for in local land use plans and would not extend infrastructure or roads into an area that has not previously been accessible or developed. Consequently, implementation of the proposed project, in combination with other development in its vicinity, would not induce unplanned population growth, and the cumulative impact would be less than significant.

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Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XV. Public Services				
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 following public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☒	☐
v) Other public facilities?	☐	☐	☒	☐

Environmental Setting

Fire Protection

~~The UC Merced campus is jointly served by the Merced County Fire Department (MCFD) and Cal Fire. UC Merced has a cooperative agreement with the County of Merced for the provision of fire protection services to the campus. The MCFD responds to incidents at UC Merced with its engine company out of Fire Station 85, located at 3360 North McKee Road and supplemented by a ladder truck from the Atwater fire station (as needed) and paid call firefighters (PCFs). Fire Station 85 is currently staffed by one fire captain and one fire engineer, and UC Merced is currently funding one position per day based on the cooperative agreement with the County. Engine 85 would be on-scene at UC Merced in less than 6 minutes from the time of call receipt (UC Merced 2022).~~

The UC Merced campus is served by the City of Merced Fire Department (MFD). MFD responds to incidents at UC Merced using their established response model, which is to send the closes engine to an incident location. MFD's closest fire station is Fire Station 55, located at 3520 North Parsons Ave. MFD is a full-service municipal fire department with 87 active fire fighters, five support staff, and an array of urban fire response equipment and vehicles, including ladder trucks. MFD's minimum staffing per day is 24 personnel with one battalion chief. MFD service response is expected to meet or exceed a response time of six minutes from the time of call receipt (UC Merced 2024).

Police Protection

The UC Merced campus is served by the UC Merced Police Department. The department is responsible for providing 24-hour service for on-campus calls. It has a mutual aid agreement with the Merced County Sheriff's Department and the City of Merced Police Department (MPD). The department is currently staffed with 16 sworn officers. The UC Merced Police Department

maintains a service level standard of 2.3 officers per 1,000 persons of the campus population. It is anticipated that when the campus enrollment level is 15,000 full-time equivalent students, a total of 30 sworn officers would serve the campus (UC Merced 2020).

Schools

The UC Merced campus 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 (MUHSD). The MCSD owns and operates 14 elementary schools and four middle schools while the WUSD owns and operates two elementary schools and one middle school in the WUSD; the MUHSD owns and operates nine high schools.

Parks

Within the UC Merced campus, there are a variety of existing recreational facilities, including several quad areas, recreation fields, plazas, and greenspaces of various sizes. There are also tennis courts, basketball courts, an aquatic center, pedestrian pathways, and trails on the campus.

Lake Yosemite Regional Park is the closest offsite facility to the UC Merced campus. 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) (UC Merced 2020). The City of Merced Parks and Community Services Department also maintains nearby city parks and recreational facilities. Community and neighborhood parks located within the vicinity of the UC Merced campus include Elmer Murchie Park, Fahrens Park, Bob Carpenter Neighborhood Park, Merino Park, Ranhilly Park, and Burbank Park, though these facilities are located at least 2 miles to the west/southwest of campus.

Other Facilities – Libraries

UC Merced provides extensive library resources through its Leo & Dottie Kolligian Library, which is located on the UC Merced campus. The resources are primarily for the research and educational needs of students, faculty and staff; however, there is some public access (UC Merced 2020). Furthermore, Merced College also provides library resources to meet the research and educational needs of its students through its library on the college campus, located three miles southwest of the UC Merced campus.

The Merced County Library System also provides library service to the region and operates 15 branches throughout the county. The system provides book and other media lending, online databases, virtual reading, e-books, e-audio, and literacy programs (MCLS 2022). The main library branch (next to the Merced County Courthouse at 21st and O Streets) is 44,050 square feet in size and located approximately 4.8 miles southwest of the UC Merced campus in downtown Merced.

Impact Discussion

a.i) The proposed project would construct student housing on a parcel that currently consists of a parking lot, which would contribute to an increase in calls for fire service compared to the current undeveloped condition. ~~The UC Merced campus, including the projectsite,~~

~~is currently served jointly by the MCFD and Cal Fire.~~ The UC Merced campus was annexed by the City of Merced in July of 2024 and is now served by the City of Merced Fire Department.

~~It is anticipated that the City of Merced will file an application to the Merced County Local Agency Formation Commission (LAFCo) to annex the UC Merced campus in 2023. The timing as to when the annexation will be approved is unknown at this time. The UC Merced campus will be served by the City of Merced Fire Department (MFD) when the annexation is approved.~~

For planning purposes, the MFD has a deployment goal for areas of the community to be within a 1.5-mile radius for engine companies and a 2.5-mile radius for ladder companies. The two closest stations to the campus with engine companies are Station 55, located at 3520 North Parsons Avenue, and Station 53, located at 800 Loughborough Drive. These two stations are located approximately 3.2 miles and 5.4 miles, respectively, from the campus. The closest station with a ladder truck is Station 51, located at 99 East 16th Street, approximately 6.6 miles from the campus. As a result, the campus would be outside the MFD's coverage goal given these distances, however MFD service response is expected to meet or exceed a response time of six minutes from the time of call receipt.

There are plans to construct two new fire stations in the vicinity of the UC Merced campus to serve future growth ~~in the northern portion of the SOI/SUDP area~~ on campus and in nearby areas. One station would be located on the nearby VST property, approximately 0.7 miles southeast of the campus, while the other station would be located within the Bellevue Ranch subdivision on the northwest corner of Bellevue Road and Barclay Way, approximately 1.2 miles west of the campus. With construction of the stations, the MFD would be able to meet its deployment goal with respect to the proposed project. Construction of the new fire stations would be subject to CEQA requirements for environmental assessment, which would allow for the identification and consideration of potential impacts and mitigation. As a result, potential impacts associated with the construction of new fire facilities would be analyzed as part of separate environmental review efforts and minimized to the maximum extent feasible in accordance with CEQA. Based on the analysis in the City's General Plan EIR, the City concluded that the provision of fire facilities would be less than significant (City of Merced 2012).

~~If for some reason the campus has not been annexed to the City of Merced when the proposed project is occupied in 2025, the campus, including the proposed project, would continue to be jointly served by the MCFD and Cal Fire. Both agencies have indicated that the proposed project, in conjunction with future development on campus, would likely require a new and/or expanded fire station, but that there are no current active plans to construct a new facility and/or expand the existing facility (Pimentel 2022). It is anticipated that Station 85, the facility currently serving the campus, would be expanded, and that CEQA documentation for any expansion would be completed by the County. Based on a review of the current condition at Fire Station 85, there appears to be vacant land available at the fire station to expand the facility. As this area has previously been~~

~~disturbed it is expected that the environmental effects associated with expansion would either be less than significant and/or reduced to a less-than-significant level with mitigation. Should a new fire station be required, it is expected that the environmental effects associated with construction would be less than significant as the siting and construction of the new facility would have to adhere to policies included in the County's General Plan and undergo go environmental review by the County, which would require mitigation if significant impacts are identified (Merced County 2013).~~

In summary, new fire facilities would be required to serve growth on campus in the future, including the proposed project. However, based on the analyses in the City's ~~and the County's~~ General Plan EIR and the addendum prepared for the annexation of the campus to the City of Merced, the environmental effects associated with constructing these facilities are expected to be either less than significant and/or reduced to a less-than-significant level with mitigation. Therefore, the impact of the proposed project with respect to fire protection services is considered less than significant.

a.ii) The proposed project would construct student housing on a parcel that currently consists of a parking lot, which would contribute to an increase in calls for police services compared to the current undeveloped condition. The UC Merced Police Department handles all patrol, investigations, crime prevention education and related law enforcement duties for the UC Merced campus, and currently operates out of temporary facilities (trailers) located to the east of the project site. The existing campus public safety building is currently at capacity, and the UC Merced Police Department has indicated that the proposed project, in conjunction with future development on campus, would likely require a facility. However, there are no current active plans to construct a new facility (Her 2022). The land use diagram in the 2020 LRDP includes adequate land for the construction of a new public safety facility. The environmental effects of developing campus facilities were evaluated in the Subsequent EIR (SEIR) prepared for the 2020 LRDP. As shown in the SEIR, all environmental effects associated with development on CMU-designated land would be mitigated to a less-than-significant level (UC Merced 2020). In addition, the proposed student housing building would include exterior lighting and additional security features that would ensure that safety in the area is maintained and that the need for police protection services would not be substantially increased due to a substantial increase in calls for service. For these reasons, the impact with respect to new or physically altered police protection facilities would be less than significant.

a.iii) The proposed project consists of student housing, which would be rented by the bed and would not include housing for student families. Thus, the project would not generate any school age children. No new schools or the expansion of existing schools would be needed, and there would be no potential for significant environmental impacts from the construction of new or expanded school facilities. No impact would occur regarding this criterion.

a.iv) Project residents would have access to the recreational facilities on the UC Merced campus, which has enough capacity to serve new users associated with the proposed

project. With respect to neighboring Lake Yosemite Regional Park, due to the range of unique water-related recreational amenities offered at the facility that are not available on the campus, it is anticipated that project residents would patronize the park. Lake Yosemite Regional Park is currently at capacity during summer months (UC Merced 2020). While the proposed project would be primarily occupied between the fall and late spring when Merced College and UC Merced are in session, it is conservatively assumed that project residents would utilize Lake Yosemite Regional Park during the summer. As a result, project residents could contribute to the acceleration of physical deterioration of the park facilities and contribute to the need for new park facilities. The 2020 LRDP SEIR identified mitigation (2020 LRDP Mitigation Measures PUB-6a, PUB-6b, and PUB-6c) to reduce this impact to a less-than-significant level. Those measures do not apply to individual projects, such as the proposed project, and are implemented at a campus-wide level to ensure that the growth on campus does not result in the deterioration of this facility. For these reasons, the impact with respect to parks would be less than significant.

a.v) Project residents would have access to the Merced College Library, which is sufficient to meet their academic needs as the proposed project would not result in an increase in the student population at the college. In addition, project residents would have access to all services on the UC Merced campus, including the library, which has enough resources to serve project residents. Finally, project residents would not place a substantial demand on public library services as new population would not be added to the area, and thus no additional library facilities beyond those that have been contemplated would be needed. As a result, the impact with respect to new or physically altered library facilities would be less than significant.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

Fire

Cumulative development on the UC Merced campus, including the proposed project, as well as cumulative development off campus to the south and west of the campus would place additional demand on fire service providers. The campus and ~~surrounding lands are currently served by the MCFD and Cal Fire~~ the VST property to the south are currently served by the City of Merced Fire Department. ~~It is anticipated that the City of Merced will file an application to Merced County LAFCo to annex the UC Merced campus in 2023. The timing as to when the annexation will be approved is unknown at this time. The UC Merced campus will be served by MFD when the annexation is approved.~~

~~Regardless of provider,~~ Additional staff, equipment, and facilities would be required to ensure adequate levels of service. As discussed above under Item a.i, the MFD has plans to construct two

new fire stations in the vicinity of the campus to serve future growth ~~in the north/northern portion of the SOI/SUDP~~ near the campus area. ~~Furthermore, while the MCFD and Cal Fire do not currently have plans to upgrade facilities area, no facilities would be required to serve future growth on campus.~~ All new facilities would be subject to CEQA requirements for environmental assessment, which would allow for the identification and consideration of potential impacts and mitigation. As a result, significant impacts associated with these new fire stations would be minimized to the maximum extent feasible. Based on the analysis in the City's ~~and County's~~ General Plan EIR and the addendum prepared for the annexation of the campus, environmental impacts from fire station development and expansion are expected to be less than significant. Therefore, the cumulative impact of future development in the northeastern portion of the City, including the proposed project, on fire protection services would be less than significant.

Police

Cumulative development on the UC Merced campus, including the proposed project, would place additional demand for service on the UC Merced police department, while cumulative development on lands to the south and west of the campus would place additional demand on the MPD as these lands are anticipated to be annexed to the City of Merced. As discussed above under Item (a.ii), above, all campus facilities would continue to be served by UC Merced police department and would not require MPD services. A new campus public safety building would be required to serve growth on the UC Merced campus, and the environmental effects of developing campus facilities, including a new public safety building, were evaluated in the SEIR prepared for the 2020 LRDP. As shown in the SEIR, all environmental effects associated with development on CMU-designated land were mitigated to a less-than-significant level (UC Merced 2020). With respect to off-campus development under the VST and University Vista projects, if and when new or expanded MPD facilities are needed to serve these developments, these facilities would be subject to CEQA requirements for environmental assessment, which would allow for the identification and consideration of potential impacts and mitigation. As a result, potential impacts associated with new or expanded MPD facilities would be minimized to the maximum extent feasible. Therefore, the cumulative impact of future development on and adjacent to campus, including the proposed project, on police protection services would be less than significant.

Schools

Cumulative development, including growth on the UC Merced campus and on lands to the south and west of the campus, would place additional demand for service on local schools. While no student family, faculty or staff housing would be built on the campus under the 2020 LRDP or as part of the proposed project, new students with families, faculty and staff would live off campus in the surrounding communities, and thus students generated by these households would indirectly place demand on local schools; students generated by households residing in the new housing to the south and west of the campus would directly place demand on local schools. 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. Furthermore, homeowners in developments planned to the south and west of the campus as well as in the surrounding communities would also pay property taxes, a portion of which would go towards the funding of local K-12 public schools. Therefore, the

cumulative impact on schools would be less than significant. As discussed above under Item (a.iii), the proposed project would not generate school-aged children. Therefore, the proposed project would not make any contribution to this less than significant cumulative impact.

Parks

Cumulative development, including growth on the UC Merced campus and on lands to the south and west of the campus, would place an increased demand on parks and recreational facilities. Recreational and open space provided on the UC Merced campus would be adequate to serve the needs of the future residential population of the campus, as well as the daytime population of the campus, and thus future growth on the campus would not trigger the construction of new parks or expansion of existing parks in areas outside of the campus (UC Merced 2020). With respect to future growth adjacent to the campus, new parks and recreation facilities would be included within these developments. At the time these facilities are proposed for construction, they would be subject to CEQA requirements for environmental assessment, which would allow for the identification and consideration of potential impacts and mitigation. As a result, potential impacts associated with new or expanded parks facilities would be minimized to the maximum extent feasible. With respect to Lake Yosemite Regional Park, the 2020 LRDP SEIR found that future growth on campus could contribute to the acceleration of physical deterioration of this facility and contribute to the need for new facilities as the facility as at capacity during the summer months, thus resulting in a potentially significant impact. Future growth adjacent to campus could also contribute to the acceleration of physical deterioration of this facility for the same reasons. The 2020 LRDP SEIR identified mitigation (2020 LRDP Mitigation Measures PUB-6a, PUB-6b, and PUB-6c) to reduce this impact to a less-than-significant level. Those measures do not apply to individual projects and are implemented at a campus-wide level to ensure that the growth on campus does not result in the deterioration of this facility. For these reasons, the contribution of campus growth, including the proposed project, to this impact would be reduced to a less-than-cumulatively-considerable level, and the cumulative impact with respect to parks would be less than significant.

Libraries

Cumulative development, including growth on the UC Merced campus and on lands to the south and west of the campus, would place additional demand for library services. As a result, additional staff, volumes, and facilities would be required to ensure adequate levels of service. The increased demand for library services from growth on the UC campus would be provided by UC Merced as library services are presently available on the campus. In addition, project residents would have access to library services on the Merced College campus. With respect to local library services, there are currently no plans to expand Merced Branch of the Merced County Library System and/or construct a new branch to serve residents in the City of Merced. If and when new or upgraded library facilities are needed, these facilities would be subject to CEQA requirements for environmental assessment, which would allow for the identification and consideration of potential impacts and mitigation. As a result, potential impacts associated with new or expanded library would be minimized to the maximum extent feasible. For these reasons, the cumulative impact of future development on and adjacent to campus, including the proposed project, on library services would be less than significant.

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Recreation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XVI. RECREATION —				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☒	☐	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Environmental Setting

As mentioned in Section XV, Public Services, there are a variety of existing recreational facilities on the UC Merced campus. Lake Yosemite Regional Park is also the closest offsite recreational facility to the UC Merced campus. Furthermore, there are a number of community and neighborhood parks located within the vicinity of the UC Merced, though these facilities are located at least two miles to the west/southwest of the campus.

Impact Discussion

a) As discussed in Item XV(a)(iv), above, project residents would have access to the recreational facilities on the UC Merced campus, which has enough capacity to serve new users associated with the proposed project. However, project residents could contribute to the acceleration of physical deterioration of the facilities at Lake Yosemite Regional Park and contribute to the need for new park facilities. The 2020 LRDP SEIR identified mitigation (2020 LRDP Mitigation Measures PUB-6a, PUB-6b, and PUB-6c) to reduce this impact to a less-than-significant level. Those measures do not apply to individual projects, such as the proposed project, and are implemented at a campus-wide level to ensure that the growth on campus does not result in the deterioration of this facility. For these reasons, the proposed project would not 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, and this impact would be less than significant.

b) The proposed project does not include the construction of on-site recreational amenities. There would be no impact with respect to this criterion.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

Cumulative development, including growth on the UC Merced campus and on lands to the south and west of the campus, would place an increased demand on parks and recreational facilities. As discussed in Section XV, Public Services, above, future growth on the campus would not trigger the construction of new parks or expansion of existing parks in areas outside of the campus. With respect to future growth adjacent to the campus, new parks and recreation facilities would be included within these developments. At the time these facilities are proposed for construction, they would be subject to CEQA requirements for environmental assessment, which would allow for the identification and consideration of potential impacts and mitigation. As a result, potential impacts associated with new or expanded parks facilities would be minimized to the maximum extent feasible. Finally, with respect to Lake Yosemite Regional Park, the 2020 LRDP SEIR found that future growth on campus could contribute to the acceleration of physical deterioration of this facility and contribute to the need for new facilities as the facility as at capacity during the summer months, thus resulting in a potentially significant impact. Future growth adjacent to campus could also contribute to the acceleration of physical deterioration of this facility for the same reasons. The 2020 LRDP SEIR identified mitigation (2020 LRDP Mitigation Measures PUB-6a, PUB-6b, and PUB-6c) to reduce this impact to a less-than-significant level. Those measures do not apply to individual projects and are implemented at a campus-wide level to ensure that the growth on campus does not result in the deterioration of this facility. For these reasons, the contribution of campus growth, including the proposed project, to this impact would be reduced to a less-than-cumulatively-considerable level, and the cumulative impact would be less than significant.

Transportation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XVII. TRANSPORTATION — Would the project:				
a) 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 section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☒	☐

Environmental Setting

The UC Merced campus, including the project site, is accessed by Bellevue Road and Lake Road, which are two-lane rural roads. Regional access to and from the campus is provided by State Route 99 to the south (UC Merced 2020).

Regulatory Setting

Senate Bill 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law, building on legislative changes from SB 375, Assembly Bill (AB) 32, and AB 1358. SB 743 began the process to modify how impacts to the transportation system are assessed for purposes of CEQA compliance. SB 743 created a shift in transportation impact analysis under CEQA from a focus on automobile delay, as measured by level of service and similar metrics, to a focus on reducing Vehicles Miles Traveled (VMT).

SB 743 also required the Governor's Office of Planning and Research (OPR) to update the State CEQA Guidelines and establish criteria for determining the significance of transportation impacts based on VMT. The statute states that upon certification of the new guidelines, automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA, except in locations specifically identified in the new guidelines, if any.

The new criteria in the State CEQA Guidelines Section 15064.3 were adopted in December 2018. Section 15064.3 states that VMT is the most appropriate metric to assess transportation impacts and that, with limited exceptions, a project's effect on automobile delay does not constitute a significant environmental impact. The revised provisions under CEQA became effective July 1, 2020.

In addition to updating the State CEQA Guidelines, OPR published additional technical guidance in *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) (Technical Advisory). The Technical Advisory provides background on the intent of SB 743,

technical considerations in the selection of VMT metrics, methodology, and significance thresholds, criteria which could be used to screen projects out from a VMT impact analysis, and information on VMT mitigation.

The Technical Advisory sets forth guidance regarding metrics that may be calculated to evaluate VMT impacts from three types of land uses: residential, office, and retail. Institutional land use, such as a university campus, is not specifically addressed in the advisory. However, for purposes of this analysis, the UC Merced campus is treated as a mixed-use development with its residential land uses (student housing) corresponding to the residential land uses addressed in the Technical Advisory and its non-residential land uses (i.e., teaching, research, and student support facilities) corresponding to office use in the Technical Advisory. Retail land use is not applicable to the campus.

With regard to metrics, the Technical Advisory recommends the use of VMT metrics that reflect the efficiency of a project and are expressed in per capita terms. For residential land uses such as the proposed project, the Technical Advisory suggests a per capita metric based on home-based vehicle trips, i.e., the number of daily trips that a resident makes from place of residence to various destinations each day and the distance traveled in making those trips.

The Technical Advisory does not mandate the use of specific significance thresholds, but recommends that, for residential projects, a project VMT per resident that is 15 percent below that of existing residential development in the project's study area may be a reasonable threshold for determining the significance of a residential project's transportation impacts.

University of California Policy on Sustainable Practices

The University of California Sustainable Practices Policy, which was most recently updated ~~on July 24, 2020~~ in April 2024, is a system-wide commitment to minimize the University's impact on the environment and reduce its dependence on non-renewable energy sources. The UC Sustainable Practices Policy states that "The University of California is committed to responsible stewardship of resources and to demonstrating leadership in sustainable business practices. The University's locations should be living laboratories for sustainability, contributing to the research and educational mission of the University, consistent with available funding and safe operational practices."

The UC Sustainable Practices Policy contains the following goals related to reducing vehicle travel:

- The University recognizes that single-occupant vehicle (SOV) commuting is a primary contributor to commute greenhouse gas (GHG) emissions and localized transportation impacts.
  - By 2025, each location shall strive to reduce its percentage of employees and students commuting by SOV by 10 percent relative to its 2015 SOV commute rates.
  - By 2050, each location shall strive to have no more than 40 percent of its employees and no more than 30 percent of all employees and students commuting to the location by SOV.

- Each location (campus) will develop a business-case analysis for any proposed parking structures serving University affiliates or visitors to the campus to document how a capital investment in parking aligns with each campus' Climate Action Plans and/or sustainable transportation policies.

Methodology

Travel Demand Model

The Merced County Association of Governments (MCAG) Three-County Regional Travel Demand Model (MCAG Model) was used as the basis of estimating regional and project total VMT and VMT per resident. The MCAG Model includes a base year of 2018 and multiple forecast years, including 2020, 2030, 2035 and 2042. The MCAG Model contains land use, roadway network, and travel characteristics information for Merced, Stanislaus, and San Joaquin Counties, and divides the three-county area into several traffic analysis zones (TAZs). The 2020 model was used as the baseline model for this analysis.

MCAG Model Land Use

The MCAG Model land uses reflect the Merced County Association of Governments (MCAG) 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for the land uses and roadway network outside of the UC Merced campus. However, an examination of the land use data in the model for the TAZs that contain the campus revealed that the model does not contain the correct number of current campus employees and students. Therefore, the information in the model was updated to reflect the correct campus populations under current conditions (year 2022). Since the model does not have a specific student housing land use and housing in the model behaves similar to a typical household, the trip generation characteristics of on-campus housing were modified to reflect on-campus housing trip generation rates based on observed campus housing trip generation.

The 2020 Baseline housing, population, and employment for UC Merced, the City of Merced, and Merced County, with the campus population numbers adjusted, as noted above, to reflect fall 2022 values, is provided in **Table TRA-1**, *MCAG Model: Regional Housing, Population, and Employment*.

TABLE TRA-1
MCAG MODEL: REGIONAL HOUSING, POPULATION, AND EMPLOYMENT

Area	Households	Population	Area
2020/2022 Baseline			
UC Merced Campus	4,123 (student beds)	9,104 (students)	1,269
City of Merced	30,806	79,219	33,695
Merced County	91,444	243,882	87,067

NOTE: The Merced County totals include housing units and populations within the City of Merced and the UC Merced campus

SOURCE: MCAG Three County Model, October 2022 (Appendix E)

MCAG Model Roadway Network

The roadway network in the MCAG Model for the year 2020 is consistent with the network in place in 2020, including the completion of Campus Parkway between State Route 99 and Childs Avenue.

Analysis Scenarios

The campus populations for the baseline year (2022), the Project, and Baseline With Project are shown in **Table TRA-2**, *UC Merced Campus Populations*. Note that, while the students associated with the proposed project are listed as on-campus student residents, they were analyzed as residents of traditional multi-family housing in which residents travel off-campus for school, employment and other trip purposes, as opposed to students who are enrolled at UC Merced and live in on-campus housing, for which more trip "internalization" within the campus is expected.[5]

TABLE TRA-2
UC MERCED CAMPUS POPULATIONS

Scenario	On-Campus Students	Off-Campus Students	Total Students	Faculty and Staff
Baseline (2022)	4,123	4,981	9,104	1,269
Project	488	0	488	0
Baseline + Project	4,611	4,981	9,592	1,269

SOURCE: UC Merced, October 2022 (Appendix E)

The following scenarios were analyzed:

- Baseline (2022) No Project
- Baseline (2022) With Project

Impact Discussion

a) Consistent with all other development on the campus, the proposed project would continue to be completed in a manner that it is compliant with the UC Sustainable Practices Policy. As the proposed project contains design components that enhance and encourage the utilization of alternative modes of transportation to reduce dependence on single-occupant vehicles, the proposed project is generally consistent with the transportation-related goals and policies in the UC Sustainable Practices Policy.

As a state entity, the University is exempted by the state constitution from compliance with local land use regulations whenever using property under its control in furtherance of its educational purposes, and thus is not subject to policies and requirements that have been established by Merced County or the City of Merced addressing the circulation system. The proposed project would not modify the roadway network on or off the

[5] Please note that this is a conservative approach as 60 percent of the project residents are anticipated to be UCM students.

campus, and thus would not impede proposed off-campus roadway network improvements proposed by either the County or the City nor impede the implementation of County and City goals and policies related to circulation and connectivity. Next, while the Merced County General Plan does include a policy related to LOS (Policy CIR-1.5), any conflict of the proposed project with this policy would not constitute an impact to the environment under CEQA because as of July 1, 2020, VMT (not LOS) is the legally acceptable metric for evaluation of transportation-related environmental impacts pursuant to CEQA, and automobile delay is not recognized as an environmental impact under the State CEQA Guidelines. Finally, as discussed in Item (b) below, the VMT associated with the proposed project would not exceed an applicable VMT threshold of significance, and thus would not conflict with the provision of a safe and efficient regional road system that accommodates the demand for the movement of people and goods. For these reasons, the proposed project would not conflict with a program plan, ordinance or policy addressing the circulation system, and this impact would be less than significant.

b) The VMT metric and threshold of significance, used in this analysis to evaluate the project's transportation impact consistent with the recommendations presented in the OPR Technical Advisory discussed above, are presented in **Table TRA-3**, *VMT Metric and Significance Threshold*.

TABLE TRA-3
VMT METRIC AND SIGNIFICANCE THRESHOLD

Metric	Significance Threshold
Project VMT per resident	Impact would be less than significant if the Project VMT per resident is at least 15 percent below the existing regional average VMT per resident

SOURCE: Fehr & Peers, October 2022 (Appendix E)

The VMT results for the proposed project as compared to the baseline countywide regional average are provided in **Table TRA-4**, *Project Residential VMT Compared to Countywide Average*. As shown in Table TRA-4, the proposed project is estimated to generate 13.8 VMT per resident, as compared to the threshold of significance of 18.79 VMT per resident, which is more than 15 percent below the existing Merced Countywide regional average.

This result is consistent with expectations that the project residents would be able to use campus transit services (CatTracks and The Bus) to travel to and from school at Merced College, as well as to travel to employment sites and other destinations in greater Merced. While some off-campus vehicle travel is to be expected, the combination of these transit services and the availability of on-campus amenities for dining and recreation would contribute to minimizing the need for long vehicular trips by the project residents. Therefore, the proposed project would have a less than significant impact with respect to VMT.

TABLE TRA-4
PROJECT RESIDENTIAL VMT COMPARED TO COUNTYWIDE AVERAGE

VMT Type	Metric	Baseline (2020) Countywide	Project
Residential	Population	243,882	488
	Total (Home-based) VMT	5,379,412	6,763
	VMT per resident	5.77	
	Regional Average VMT per resident (County)	22.10	13.8
	Significance Threshold: VMT per resident that is 15% below regional average	18.79	---
	Is the Project VMT per resident at least 15% below regional average?	---	Yes (13.8 < 18.79)

SOURCE: MCAG Three County Model, October 2022 (Appendix E)

c) The proposed project consists of a student housing building on the site of an existing parking lot. 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 building would be developed on the campus in an area designated as Campus Mixed Use (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. Bellevue 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). There would be no impact with respect to this criterion.

d) Bellevue Road would continue to provide access to the project site. Bellevue Road, including the on-campus extension of Bellevue Road, has 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, and this impact would be less than significant.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

Consistent with the OPR's Technical Advisory discussed above, a project's cumulative impacts are based on an assessment of whether the "incremental effects of an individual 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." The Technical Advisory notes that a project that falls below an efficiency-based threshold that aligns with long-term environmental

goals and relevant plans would have no cumulative impact distinct from the project impact. As discussed under Item (b), above, the proposed project is expected to result in 13.8 VMT per resident, which would not exceed the efficiency-based significance threshold of 18.79 VMT, and the project's impact would be less than significant. As the proposed project's VMT is below the efficiency-based threshold, a separate analysis of cumulative impacts is not required, and the project's cumulative impact would be less than significant.

Growth on the UC Merced campus would continue to adhere to the UC Sustainable Practices Policy which would reduce travel to and from campus. Future growth adjacent to the campus would also adhere to policies found in the Merced County General Plan that ensure that adequate access is provided and maintained for all county land uses or the policies contained in the City of Merced Vision 2030 General Plan that ensure that adequate access is provided and maintained for all city land uses. As a result, cumulative development on and off campus would not conflict with local plans that address the circulation system. Furthermore, cumulative development on the campus would be required to comply with Campus roadway design standards and cumulative development off campus would be required to comply with County or City roadway design standards, and thus cumulative development would avoid creating hazardous roadway conditions. Finally, access to cumulative development on and off campus would also be reviewed by either the Merced County or Merced City fire departments to ensure that adequate emergency access is Provided. For these reasons, the cumulative impact associated with transportation plans, roadway hazards, and access would be less than significant.

References

Fehr & Peers. 2022. VMT Impact Analysis for the UCM/MCC "Promise" Intersegmental Housing Project. November 2, 2022.

UC Merced. 2020. *UC Merced 2020 Long Range Development Plan Subsequent Environmental Impact Report*. SCH No. 2018041010. Certified March 19, 2020.

University of California. 2020. University of California – Policy on Sustainable Practices. Issuance/Effective Date July 24, 2020.

Tribal Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XVIII. TRIBAL CULTURAL RESOURCES —				
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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Environmental Setting

According to background research at the Central California Information Center of the California Historical Resources Information System at California State University, Stanislaus on January 12, 2022 (File No. 12041I), no known archaeological resources that could be considered tribal cultural resources, listed or determined eligible for listing in the California Register of Historical Resources (California Register), or included in a local register of historical resources as defined in PRC Section 5020.1(k), pursuant to PRC Section 21074(a)(1) are present on the project site.

According to the requirements of PRC Section 21080.3.1(b), University sent letters on September 30, 2022 to culturally-affiliated Native American tribes describing the project and a request to consult on the project. No tribes responded to the request for consultation within the 30 days of the receipt of formal notification, according to the stipulations of PRC Section 21080.3.1(d).

Impact Discussion

a) Tribal cultural resources are: (1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, in the California Register of Historical Resources (California Register), or local register of historical resources, as defined in PRC Section 5020.1(k); or (2) a resource determined by the CEQA lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c). For a cultural landscape to be considered a tribal cultural resource, it must be geographically defined in terms of the size and scope of the landscape (PRC Section 21074[b]). A historical resource, as defined in PRC Section 21084.1,

unique archaeological resource, as defined in PRC Section 21083.2(g), or non-unique archaeological resource, as defined in PRC Section 21083.2(h), may also be a tribal cultural resource.

Based on the results of the records search and environmental context, there is a low potential for previously undocumented archaeological resources to be identified in the project site during project implementation. Although unlikely, the inadvertent discovery of archaeological resources, which could also be considered tribal cultural resources, cannot be entirely discounted. Inadvertent damage to tribal cultural resources during construction would be a potentially significant impact. Implementation of Mitigation Measure CUL-1, outlined in Section V, Cultural Resources, would reduce the impact to a less-than-significant level.

Cumulative Impacts

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

Cumulative development in portions of the Central Valley identified as the territory of the local Native American community could result in significant cumulative impacts on tribal cultural resources. This includes future development on the UC Merced campus and to the south and west of the campus. While no known pre-contact Native American sites are located within the UC Merced campus (UC Merced, 2009), the potential for unknown buried tribal cultural resources remains. In addition, while the presence of tribal cultural resources on land proposed for development to the south and east of the campus has not been evaluated, there is also the potential that these resources may be present on those project sites. Each individual project is subject to review under CEQA and is required to obtain necessary permits and approvals from federal and state resource agencies. As a result of these processes, each project would be required to avoid, minimize, and compensate for its impacts on sensitive tribal cultural resources in consultation with Native American tribes, such that the cumulative impact would be reduced, though not completely eliminated. Because not all such impacts from these other projects have been or can be reduced with certainty to less-than-significant levels, the loss of any tribal cultural resources would result in a significant cumulative impact.

As described above, there are no known tribal cultural resources within the project site. However, despite the negative findings, ground disturbing activity within the project area has the potential to encounter previously unrecorded tribal cultural resources, and construction-associated grading and excavation could destroy these resources. As a result, implementation of the proposed project could result in a considerable contribution to the cumulative loss of tribal cultural resources. However, with the implementation of Mitigation Measure CUL-1, the contribution of the proposed project to this impact would be reduced to a less-than-cumulatively-considerable level, and the cumulative impact would be less than significant.

References

California Historical Resources Information System at California State University, Stanislaus**,** January 12, 2022 (File No. 12041I). On file at ESA.

UC Merced. 2009. *UC Merced and University Community Project Environmental Impact Statement/Environmental Impact Report*. SCH No. 2008041009. Certified March 19, 2009. Available online: https://planning.ucmerced.edu/ 2020LRDP. Accessed September 28, 2022.

Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XIX. UTILITIES AND SERVICE SYSTEMS — 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?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Environmental Setting

The campus is located within the ~~unincorporated Merced County~~ City of Merced since it's annexation by the City of Merced in July 2024. ~~However~~ Prior to annexation, the campus site ~~is~~ was within the City's SOI/SUDP area and ~~receives~~ received water and wastewater services from the City of Merced under an extraterritorial Urban Services agreement. ~~The agreement states that the City will serve a campus population of up to 10,000 Full Time Equivalent (FTE) students.~~ The campus will continue to receive water and wastewater from the City of Merced now that it is within City boundaries.

Water

The City of Merced provides potable water to the UC Merced campus. The City's source of potable water is the groundwater aquifer underlying the community, the Merced subbasin. The City water system has 20 groundwater wells with a total well capacity of 54,400 gallons per minute (gpm). All of the wells pump directly into the distribution system and have chlorination facilities for disinfection. The City also produces potable water for use on the UC Merced 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. Irrigation water for the campus is also obtained from the City of Merced supply. Finally, 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 (UC Merced 2020).

The City's water distribution system consists of a single pressure zone since the terrain is generally flat. The City has approximately 1.5 million linear feet (280 miles) of water system pipelines that generally range from 4 to 16 inches in diameter. The UC Merced campus is presently served by a 16-inch water line in Bellevue Road. An on-campus distribution system delivers potable water to each building within the campus (UC Merced 2020).

Wastewater

The City of Merced provides wastewater service to the UC Merced campus. Wastewater generated on the campus is treated at the City's Wastewater Treatment Plant (WWTP) located approximately 3 miles south of the city. The facility has the capacity to treat 12 million gallons of day (mgd) of wastewater and is currently treating approximately 8.2 mgd of wastewater, and thus is operating at about 68 percent of its capacity. To accommodate future growth in its service area, including growth on the UC Merced campus, the City has approved an expansion of the WWTP to treat up to 20 mgd of wastewater. The expansion would accommodate wastewater flows from the approved 1997 Specific Urban Development Plan (SUDP) that would generate approximately 17.1 mgd of wastewater, in addition to 2.25 mgd of wastewater flows expected from the full development of the campus (City of Merced 2006), based on the University's 2002 estimate of the wastewater that would be generated by the campus.

The City's wastewater collection system includes over 400 miles of gravity sewers ranging in size from 6 to 48 inches in diameter. Wastewater generated on the UC Merced campus is conveyed to the City's WWTP via an existing 21-inch wastewater pipeline in Bellevue Road and an existing 27-inch wastewater pipeline in G Street. The Bellevue Road Trunk was constructed to convey wastewater flows from the UC Merced campus at full build-out (with a population of approximately 25,000) along with some additional capacity for planned development along the Bellevue Road corridor between G Street and Lake Road. The Bellevue Road Trunk has the capacity to convey approximately 6.5 mgd of wastewater under peak wet weather conditions, and as of 2017, had between 2.5 and 5 mgd of excess capacity. The G Street Trunk has the capacity to convey approximately 4.14 mgd of wastewater under peak wet weather conditions, and as of 2017, had an existing flow of 0.85 mgd of wastewater (City of Merced 2017).

Storm Water

Storm water on the UC Merced campus 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. Basins on the campus are designed and constructed so that all flows under normal rainfall conditions are retained, and all flows under larger storm conditions, including the 100-year, 24-hour storm, are detained and released at rates that would not exceed the existing peak and total flows (UC Merced 2020).

Solid Waste

Solid waste in the eastern portion of Merced County, where the UC Merced campus is located, is disposed of at the Highway 59 Landfill, which accepts nonhazardous waste and recyclable materials, including construction and demolition (C&D) and municipal waste. The facility has a maximum daily permitted disposal capacity of 1,500 tons per day (tpd) and a total capacity of

approximately 30.0 million cubic yards (or about 22.8 million tons). The Highway 59 Landfill has a current remaining capacity of approximately 28.1 million cubic yards (or about 21.6 million tons) with an estimated closure date of 2055 (CalRecycle 2022).

The Merced County Regional Waste Management Authority (MCRWMA) currently has plans to expand the Highway 59 Landfill. The expansion would increase the permitted design capacity of the facility by approximately 6.9 million cubic yards (or approximately 5.2 million tons) and extend its operational life to sometime between 2076 and 2080 (MCRWMA 2016).

Electricity

Pacific Gas & Electric (PG&E) provides electricity to the UC Merced campus. Current electricity demand for the campus is approximately 2.5 megawatts per year. The campus site is within PG&E's Wilson 115-kilovolt (kV) subarea. There are three PG&E transmission lines near the campus: the 230-kV Belotta-Herndon line that originates at the Wilson Substation south of Childs Avenue and terminates north of Bellevue and west of Highway 59; the 115-kV Wilson-Atwater line; and the 70-kV Merced-Merced Falls line (UC Merced 2020).

Natural Gas

PG&E currently supplies natural gas to the UC Merced campus. The main pipeline serving the Merced area is an 8-inch-diameter transmission pipeline that parallels Highway 99 through Merced. The campus is connected to the regional natural gas distribution system via a pipeline aligned along Lake Road. Additional distribution lines and hook-ups are generally constructed on the campus on an "as needed" basis. Current natural gas demand for the campus is approximately 571,482 therms per year (UC Merced 2020).

Impact Discussion

a) The proposed project would connect to existing utility infrastructure that currently serves the UC Merced campus. Potable water would be supplied via Well Number 17, which is located on the campus, while wastewater would be treated at the City's WWTP. Both the existing on-campus water distribution system and existing on-campus sewer conveyance system have adequate capacity to serve the proposed project. With respect to the off-campus sewer system, the Bellevue Road Trunk was sized to accommodate a campus population of 25,000 students under the 2009 LRDP, and as campus population has since been reduced to 15,000 students under the 2020 LRDP, enough capacity in the line exists to serve the proposed project even though the project is not an element of campus growth under the 2020 LRDP. In addition, while the G Street Trunk has enough existing capacity to serve the proposed project, most of the capacity in the line is reserved for entitled properties expected to connect to this line, so an upgrade to the line between Bellevue Road and Cardella Road has been recommended (City of Merced 2017). The recommended upgrade is part of the Northern Trunk Sewer Project, with construction anticipated to start as early as 2022, and lasting approximately 18 months (City of Merced 2020). However, because the trunk main upgrade would be located in G Street right-of-way, which is already disturbed, the impacts from pipeline construction would be less than significant.

Storm water generated by the proposed project would be collected by the existing on-campus drainage system and conveyed into the storm water basin located south of the project site. As the project site is mostly covered with pavement at the present time, implementation of the project is not expected to substantially increase the amount of impervious surface on the site, and thus would not substantially increase the amount of storm water generated on the project site that is conveyed to the existing on-campus drainage system. As a result, no upgrade to the existing on-campus drainage system would be required to accommodate the proposed project.

The proposed project would connect to the existing electricity and telecommunication utilities on the UC Merced campus and would not require additional infrastructure to be adequately supported. No natural gas connection is proposed.

In summary, development of the proposed project would not require construction of new or expanded utilities and infrastructure that has not already been considered. As a result, the impact with respect to this criterion would be less than significant.

b) The proposed project would increase demand for potable water on the campus. Based on a population of 488 residents and a water demand generation rate of 31.4 gallons per capita per day (gpcd) (UC Merced 2020), the proposed project would demand approximately 15,323 gallons per day (gpd) (or 17.2 acre-feet per year [AFY]). This estimate is conservative as the project would comply with the UC Sustainable Practices Policy, which includes provisions to reduce water demand. On August 16, 2021, the Merced City Council adopted the City of Merced's 2020 UWMP. According to the City of Merced's 2020 UWMP, the City would be able to meet water demand during normal, dry, and multiple-dry years through the year 2035, including existing and future demand on the UC Merced campus (City of Merced 2021). Water demand associated with the proposed project is substantially accounted for in the Campus' water projections because 60 percent of the project's residents would be transfer students who have been counted in the Campus's growth projections under the 2020 LRDP. About 40 percent of the residents would be Merced College students whose water demand has not been accounted for in campus growth projections under the 2020 LRDP. However, as the proposed project would not increase the overall enrollment at Merced College, that population has been accounted for in local land use plans upon which the demand projections in the City's 2020 UWMP are based. Therefore, sufficient water supplies are available to serve the proposed project and reasonably foreseeable future development during normal, dry and multiple dry years, and this impact would be less than significant.

c) The proposed project would generate additional wastewater on the campus that would require treatment. Based on a population of 488 residents and a wastewater generation rate of 15.1 gpcd (UC Merced 2020), the proposed project would generate an average flow of 7,369 gpd or less than 0.01 mgd. Wastewater generated by the proposed project would be conveyed to the City's WWTP for treatment and disposal. As discussed above, the City's WWTP currently has the capacity to treat up to 12 mgd of wastewater and the City has approved the expansion of the capacity of its WWTP to 20 mgd. The expansion

of this facility, in part, was based on a 2002 estimate that full development of the campus would generate an additional 2.25 mgd of wastewater. It is now expected that wastewater flows from campus would be about 0.27 mgd in 2030 (UC Merced 2020), well below the previous estimate. Therefore, even though the proposed project has not been accounted for in campus growth projections under the 2020 LRDP, enough treatment capacity would be available to serve the proposed project as 1.98 mgd of planned capacity remains that was attributed to the campus. Furthermore, the proposed project's population has been accounted for in local land uses plans upon which the generation projections for the expansion were based as the proposed project would not increase the overall enrollment at Merced College. For these reasons, the WWTP has adequate capacity to serve the proposed project's projected demand in addition to the provider's existing commitments, and this impact would be less than significant.

d-e) The proposed project would generate additional solid waste on the campus that would require disposal. Based on a population of 488 residents and a solid waste generation rate of 160 pounds per student per year, the proposed project would generate 39.0 tons[6] of solid waste per year, or approximately 0.11 tons per day. However, to be consistent with the UC Sustainable Practices Policy, approximately 90 percent of the solid waste solid was generated by the proposed project would be diverted, as thus the proposed project would generate 3.9 tons[7] of solid waste per year, or approximately 0.01 tons per day.

Compliance with existing policies and regulations, including the UC Sustainable Practices Policy, would reduce non-renewable sources of solid waste and minimize the project's solid waste disposal to the extent feasible. In addition, compliance with existing policies and regulations would not cause the proposed project to violate other applicable federal, state, and local statutes and regulations related to solid waste. The Highway 59 Landfill has approximately 21.6 million tons of remaining capacity, including enough capacity to serve the proposed project's solid waste stream through at least 2055. In addition, the MCRWMA plans on increasing capacity of the landfill by approximately 5.2 million tons and extend its anticipated closure date to at least 2076. Therefore, the proposed project would not generate solid waste in excess of the local infrastructure, nor would it impair the attainment of state-level or local waste reduction goals. This impact would be less than significant.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

6 488 residents X 160 pounds/student/year = 78,080 pounds/year / 2,000 pounds/ton = 39.0 tons/year.

7 39.0 tons/year X 10 percent = 3.9 percent

Infrastructure

Cumulative development, including growth on the UC Merced campus and to the south and west of the campus, would either connect to existing utility infrastructure or require the construction of new utility infrastructure. The environmental effects of developing campus facilities, including new utility infrastructure on the campus, were evaluated in the Subsequent EIR prepared for the 2020 LRDP. As shown in this document, all environmental effects associated with development on CMU-designated land were mitigated to a less-than-significant level (UC Merced 2020). When new or expanded utility infrastructure are needed to serve planned growth adjacent to the campus, this infrastructure would be subject to CEQA requirements for environmental assessment, which would allow for the identification and consideration of potential impacts and mitigation. As a result, potential impacts associated with new or expanded infrastructure would be minimized to the maximum extent feasible. For these reasons, the cumulative impact with respect to utility infrastructure would be less than significant.

Water Supply

Cumulative development, including growth on the UC Merced campus and to the south and west of the campus, would generate an increased demand for water. As discussed under Item (b) above, the 2020 UWMP accounted for future growth on the UC Merced campus. Furthermore, growth on the UC Merced campus would comply with the UC Sustainable Practices Policy, which includes provisions to reduce water demand. In addition, as lands to the south and west of the campus were~~are~~ located within the City's SOI/SUDP area, proposed growth to the south and west of the campus has also been accounted for in the 2020 UWMP. Finally, as discussed under Item (b) above, as the proposed project would not increase the overall enrollment at Merced College, its population has been accounted for in the UWMP. According to the 2020 UWMP, there would be adequate water to serve the cumulative growth and development in the City of Merced, including the ~~SOI/SUDP area~~ campus area. For these reasons, the cumulative impact with respect to water supply would be less than significant.

Wastewater Treatment

Cumulative development, including growth on the UC Merced campus and to the south and west of the campus, would generate additional wastewater that would be treated at the City's WWTP. As discussed above, the City's WWTP currently has the capacity to treat up to 12 mgd of wastewater and the City has approved the expansion of the capacity of its WWTP to 20 mgd. In addition, as noted earlier, the WWTP expansion would accommodate wastewater flows from the approved 1997 Specific Urban Development Plan (SUDP) area that would generate approximately 17.1 mgd of wastewater, in addition to 2.25 mgd of wastewater flows expected from the full development of the campus based on the University's 2002 estimate of wastewater that would be generated by the campus. As discussed above in Item (c), it is now expected that wastewater flows from the campus would be well below the 2002 estimate, and thus adequate treatment capacity exists to serve future growth on campus under the 2020 LRDP. However, as lands to the south and west of the campus were not included in the approved 1997 SUDP area that was used to estimate the needed expansion of the WWTP, adequate treatment capacity to serve the proposed growth to the south and west of the campus may not be available in the future, thus resulting in a potential cumulative impact with respect to wastewater treatment capacity.

However, as 1.98 mgd of planned wastewater treatment capacity that was attributed to the campus remains, enough treatment capacity exists to serve the proposed project, even though it was not contemplated under the 2020 LRDP. For this reason, the contribution of the proposed project to this impact would not be cumulatively considerable, and thus the project's cumulative impact would be less than significant.

Solid Waste Disposal

Cumulative development, including growth on the UC Merced campus and to the south and west of the campus, would generate additional solid waste that would be disposed of in the Highway 59 landfill. As discussed above, the MCRWMA has plans to increase capacity at the landfill by approximately 5,201,035 tons and extend the anticipated closure year to at least 2076. Finally, future development on the campus, including the proposed project, would be subject to the UC Sustainable Practices Policy, which requires that 90 percent of all waste generated on campus be diverted, and growth to the south and west of campus be subject to local and state management and reduction statutes and regulations related to solid waste. Therefore, considering the planned capacity increase at the Highway 59 Landfill and required compliance with state and local solid waste standards, the cumulative impact with respect to solid waste would be less than significant.

References

California Department of Resources Recycling and Recovery (CalRecycle). 2022. SWIS Facility/Site Activity Details, Highway 59 Landfill (24-AA-0001). Available online: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/2908?siteID=1863. Accessed: October 18, 2022.

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Merced County Regional Waste Management Authority (MCRWMA). 2016. *Highway 59 Landfill Valley Fill Project Environmental Impact Report*. SCH No. 2014061081. Certified May 19, 2016. Available online: https://www.mcagov.org/233/Valley-Fill-Project. Accessed October 18, 2022.

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Wildfire

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XX. WILDFIRE — 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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐

Environmental Setting

According to the California Department of Forest and Fire Protection (Cal Fire), the UC Merced 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) (Cal Fire 2022). Cal Fire 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 Merced Vernal Pool and Grassland Reserve (CalFire 2022).

Impact Discussion

a) 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 to include the proposed project in emergency planning. An emergency action plan would be prepared by UC Merced for the proposed project that would provide detailed procedures for project residents to follow in the event of an emergency and/or evacuation. For these reasons, 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.

b) As discussed above, the UC Merced campus is not located in a designated SRA or LRA VHFHSZ. The proposed project is located on the south side of the developed 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 required to comply with the Campus' Emergency Operations Plan and Crisis Communications Plan. An individual emergency response plan would be prepared by UC Merced for the proposed building that would provide evacuation procedures in the event of a fire or wildfire in the area. 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, fire alarms and fire extinguisher stations. For these reasons, 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. This impact would be less than significant.

c) The proposed project includes the development of a new building on an existing parking lot. 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 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, this impact would be less than significant.

d) 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 UC Merced campus (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. As discussed in Section X, Hydrology and Water Quality, the UC Merced campus 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. The impact would be less than significant.

Cumulative Impact Discussion

Cumulative development in the vicinity of the project site includes future growth on the UC Merced campus under the 2020 LRDP, and two proposed projects located adjacent to the campus, the University Vista project, located west of the campus across Lake Road, and the Virginia Smith Trust (VST) Specific Plan project, located south of the campus on the VST property.

The UC Merced campus, including the project site, and lands to the south and west of the campus are not located in a designated SRA or LRA VHFHSZ. In addition, future growth on the campus,

including the proposed project, would adhere to the Campus' Emergency Operations Plan and a Crisis Communications Plan, while growth proposed to the south of the campus would be subject to several emergency response plans, most notably the Merced County Multi-Jurisdictional Hazard Mitigation Plan, which provides guidance for the County's response to emergency situations, including wildfire and emergency evacuation. Next, to comply with applicable regulations and emergency preparedness plans, future growth on the UC Merced campus and nearby properties would implement risk abatement strategies such as fuel reduction treatments (fire breaks), ongoing maintenance of the same, and provision of adequately designed roadways, access points, fire hydrants, and other facilities. Cumulatively, these types of infrastructure improvements would result in an improved condition with respect to wildfire preparedness and the ability to lessen the overall severity of future wildfires in the area. Finally, the UC Merced campus and vicinity are relatively flat and are not located in an area that is high risk for flooding or landslides. Therefore, even if a wildfire were to occur in the area, it is very unlikely that post-fire landslides or flooding would occur. For these reasons, the cumulative impact with respect to wildfire would be less than significant.

References

CAL FIRE. 2022. Fire Hazard Severity Zone Viewer. Available online: https://egis.fire.ca.gov/FHSZ/. Accessed October 18, 2022.

Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XXI. MANDATORY FINDINGS OF SIGNIFICANCE —				
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?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Impact Discussion

a) Construction activities associated with the proposed project would not have the potential to result in significant impacts to special-status and non-special-status migratory bird nests. In addition, the project area does not contain any riparian areas or sensitive natural communities, nor does it contain any state or federal wetlands or other waters. Therefore, the proposed project would not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal.

As with any project that involves ground disturbance, construction activities associated with the proposed project have the potential to result in significant impacts to previously unknown subsurface archaeological resources or human remains encountered during site grading and excavation activities. Any potential adverse effects to unknown archaeological resources or human remains resulting from soil disturbance would be reduced to a less than significant level by the implementation of Mitigation Measures CUL-1 and CUL-2, which address the accidental discovery of previously unknown archaeological resources or human remains. Therefore, the proposed project would not eliminate examples of the major periods of California history or prehistory.

b) Each environmental topic area in this Initial Study includes an analysis of cumulative impacts. No significant cumulative impacts from the proposed project have been identified.

c) The proposed project would not directly or indirectly cause significant adverse effects on human beings. Air pollutant emissions, hazardous materials and noise would be the only resources through which the proposed project could have an effect on human beings; however, all impacts with regard to air quality, hazardous materials and noise would either be less than significant or reduced to less than significant with mitigation, and the proposed project would therefore avoid causing substantial adverse effects on human beings. For all other resource areas, the proposed project would either have no significant impacts, or involve impacts that would not affect human beings.

CHAPTER 7
Report Preparers

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Appendix A
Mitigated Negative Declaration

Draft Mitigated Negative Declaration

Lead Agency

University of California

Project Proponents

University of California, Merced
Merced Community College District

Project Location

University of California, Merced campus

Project Description

The proposed project consists of a single building, site improvements, and underground utility connections. The proposed building would be three to four stories in height (36-56 feet) and provide 130,231 gross square feet (gsf) and 103,532 assignable square feet (asf) of building space. The proposed building would include a mix of two-bedroom apartment units with two beds, two-bedroom apartment units with four beds, two-bedroom double occupancy apartments, four-bedroom single occupancy apartment units, nine studio apartments reserved for resident advisors with one bed each, and one apartment reserved for the resident director with one bed. Overall, the Project would provide a total of 488 beds.

Mitigation Measures

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

MM AQ-1b: The construction contract for the proposed project shall include all measures specified in SJVAPCD Regulation VIII (as amended) to reduce fugitive dust impacts, including but not limited to the following:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purpose, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions 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.

MM BIO-1: The proposed project shall incorporate bird-safe design practices (for example, American Bird Conservancy's Bird- Friendly Building Design [2015] or San Francisco Planning Department's Standards for Bird-Safe Buildings [2011]). The UC Merced Physical and Environmental Planning Department shall review the final designs of the proposed building to determine that appropriate bird safety designs have been effectively incorporated to reduce potential impacts to birds. The following design strategies shall be considered in the design of the proposed building:

- Create building facades with "visual noise" via cladding or other design features that make it easier for birds to identify the building and not mistake windows for open sky or trees.

- Incorporate windows that are not clear or reflective into the building.

- 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.

MM CUL-1: 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 project site, 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 University.

MM CUL-2: If human remains of Native American origin are discovered during ground disturbing activities, the MCCD and the University 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 48 hours after being notified by the Commission.

MM GEO-1: 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 the 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.

MM GEO-2: 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.

MM NOI-1: UC Merced shall develop and implement a construction noise mitigation program for the proposed 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 a.m. and 6:00 p.m. 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.
- 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 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 construction activities, such as 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 project construction.

MM NOI-2: Drilled piles will be used where geological conditions permit their use. For any impact pile driving activities occurring within 100 feet of student housing, limit impact-pile driving activities to daytime hours to avoid sleep disturbance at residential housing. 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.

Determination

In accordance with CEQA, a Draft Initial Study was prepared by UC Merced that evaluated the environmental effects of the proposed project. On the basis of the project's Draft Initial Study, the Campus determined that with the incorporation of the proposed mitigation measures, the proposed project could not have a significant effect on the environment.

Public Review

In accordance with Section 15073 of the CEQA Guidelines, the Initial Study/Proposed Mitigated Negative Declaration for the project was circulated for public and agency review from December 21, 2022 to January 19, 2023. Comments received during the review period and responses to these comments are presented in the Final Initial Study.

Appendix B

Air Quality and Greenhouse Gas Emissions Calculations

Merced City College Student Housing Project v5 - Merced County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Merced City College Student Housing Project v5

Merced County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	130.00	Dwelling Unit	5.00	124,400.00	490

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	49
Climate Zone	3			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	2.68	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E GHG emission factor based on https://www.pgecorp.com/corp_responsibility/reports/2021/assets/PGE_CRSR_2021.pdf

Land Use - Information provided by Paul's emails

Construction Phase -

Off-road Equipment - Construction equipment updated to match HSB-ME.

Off-road Equipment -

Off-road Equipment - Construction equipment updated to match HSB-ME.

Off-road Equipment -

Grading - 5 acres of cut and fill balanced, 8066 cubic yards split evenly between the two

Trips and VMT - Add two vendor trips per day to whatever the default is to account for water trucks coming to the site each day

Architectural Coating - Based on https://www.valleyair.org/rules/currntrules/r4601.pdf

Area Coating - Based on https://www.valleyair.org/rules/currntrules/r4601.pdf

Construction Off-road Equipment Mitigation - Mitigation measures updated to match HSB-ME and current Campus plans.

Merced City College Student Housing Project v5 - Merced County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mobile Land Use Mitigation -

Area Mitigation - Mitigation measures updated to match HSB-ME and current Campus plans.

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Parking	150.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	50
tblAreaCoating	Area_EF_Nonresidential_Interior	150	50
tblAreaCoating	Area_EF_Parking	150	50
tblAreaCoating	Area_EF_Residential_Exterior	150	50
tblAreaCoating	Area_EF_Residential_Interior	150	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	5/22/2025	4/24/2025
tblConstructionPhase	PhaseEndDate	4/2/2025	3/5/2025
tblConstructionPhase	PhaseEndDate	5/15/2024	4/17/2024
tblConstructionPhase	PhaseEndDate	4/28/2025	3/31/2025
tblConstructionPhase	PhaseEndDate	5/3/2024	4/5/2024
tblConstructionPhase	PhaseStartDate	4/29/2025	4/1/2025
tblConstructionPhase	PhaseStartDate	5/16/2024	4/18/2024
tblConstructionPhase	PhaseStartDate	5/4/2024	4/8/2024
tblConstructionPhase	PhaseStartDate	4/3/2025	3/6/2025
tblConstructionPhase	PhaseStartDate	4/27/2024	4/1/2024
tblGrading	AcresOfGrading	24.00	5.00
tblGrading	AcresOfGrading	7.50	5.00
tblGrading	MaterialExported	0.00	4,033.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblGrading	MaterialExported	0.00	4,033.00
tblGrading	MaterialImported	0.00	4,033.00
tblGrading	MaterialImported	0.00	4,033.00
tblLandUse	LandUseSquareFeet	130,000.00	124,400.00
tblLandUse	LotAcreage	3.42	5.00
tblLandUse	Population	372.00	490.00
tblOffRoadEquipment	LoadFactor	0.48	0.48
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	203.98	2.68
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	14.00	16.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblWoodstoves	NumberCatalytic	5.00	0.00
tblWoodstoves	NumberNoncatalytic	5.00	0.00

2.0 Emissions Summary

Merced City College Student Housing Project v5 - Merced County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.1882	1.6455	1.9292	4.3100e-003	0.1725	0.0669	0.2394	0.0650	0.0628	0.1277	0.0000	384.6434	384.6434	0.0624	0.0147	390.5700
2025	0.4385	0.3974	0.5841	1.1000e-003	0.0224	0.0166	0.0390	6.0100e-003	0.0156	0.0216	0.0000	97.0121	97.0121	0.0190	1.5800e-003	97.9576
Maximum	**0.4385**	**1.6455**	**1.9292**	**4.3100e-003**	**0.1725**	**0.0669**	**0.2394**	**0.0650**	**0.0628**	**0.1277**	**0.0000**	**384.6434**	**384.6434**	**0.0624**	**0.0147**	**390.5700**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0677	0.4348	2.0756	4.3100e-003	0.1265	6.3700e-003	0.1328	0.0413	6.2700e-003	0.0476	0.0000	384.6431	384.6431	0.0624	0.0147	390.5697
2025	0.4076	0.0866	0.6404	1.1000e-003	0.0224	1.5300e-003	0.0239	6.0100e-003	1.5200e-003	7.5300e-003	0.0000	97.0121	97.0121	0.0190	1.5800e-003	97.9575
Maximum	**0.4076**	**0.4348**	**2.0756**	**4.3100e-003**	**0.1265**	**6.3700e-003**	**0.1328**	**0.0413**	**6.2700e-003**	**0.0476**	**0.0000**	**384.6431**	**384.6431**	**0.0624**	**0.0147**	**390.5697**

Merced City College Student Housing Project v5 - Merced County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**24.17**	**74.48**	**-8.07**	**0.00**	**23.62**	**90.54**	**43.70**	**33.32**	**90.05**	**63.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-1-2024**	**6-30-2024**	0.7067	0.2185
2	**7-1-2024**	**9-30-2024**	0.5319	0.1260
3	**10-1-2024**	**12-31-2024**	0.5334	0.1275
4	**1-1-2025**	**3-31-2025**	0.4349	0.1029
5	**4-1-2025**	**6-30-2025**	0.3836	0.3737
		Highest	0.7067	0.3737

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5594	0.0597	0.9850	3.6000e-004		9.2800e-003	9.2800e-003		9.2800e-003	9.2800e-003	0.0000	57.8937	57.8937	2.5900e-003	1.0300e-003	58.2661
Energy	8.2600e-003	0.0706	0.0300	4.5000e-004		5.7100e-003	5.7100e-003		5.7100e-003	5.7100e-003	0.0000	82.3481	82.3481	9.2400e-003	2.4300e-003	83.3030
Mobile	0.3340	0.8006	3.1731	8.1200e-003	0.7370	8.5100e-003	0.7455	0.1977	8.0200e-003	0.2057	0.0000	769.1820	769.1820	0.0359	0.0504	785.0861
Waste						0.0000	0.0000		0.0000	0.0000	12.1389	0.0000	12.1389	0.7174	0.0000	30.0735
Water						0.0000	0.0000		0.0000	0.0000	2.6872	0.0784	2.7656	0.2770	6.6300e-003	11.6665
Total	**0.9017**	**0.9309**	**4.1881**	**8.9300e-003**	**0.7370**	**0.0235**	**0.7605**	**0.1977**	**0.0230**	**0.2207**	**14.8260**	**909.5023**	**924.3283**	**1.0421**	**0.0605**	**968.3952**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5231	0.0597	0.9850	3.6000e-004		9.2800e-003	9.2800e-003		9.2800e-003	9.2800e-003	0.0000	57.8937	57.8937	2.5900e-003	1.0300e-003	58.2661
Energy	7.1300e-003	0.0609	0.0259	3.9000e-004		4.9200e-003	4.9200e-003		4.9200e-003	4.9200e-003	0.0000	71.1640	71.1640	8.9700e-003	2.2200e-003	72.0488
Mobile	0.3310	0.7882	3.1241	7.9600e-003	0.7223	8.3500e-003	0.7306	0.1937	7.8700e-003	0.2016	0.0000	754.3735	754.3735	0.0355	0.0495	770.0171
Waste						0.0000	0.0000		0.0000	0.0000	1.2139	0.0000	1.2139	0.0717	0.0000	3.0074
Water						0.0000	0.0000		0.0000	0.0000	2.1497	0.0659	2.2156	0.2216	5.3100e-003	9.3388
Total	**0.8613**	**0.9089**	**4.1350**	**8.7100e-003**	**0.7223**	**0.0226**	**0.7448**	**0.1937**	**0.0221**	**0.2158**	**3.3636**	**883.4971**	**886.8607**	**0.3404**	**0.0581**	**912.6781**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.48**	**2.37**	**1.27**	**2.46**	**2.00**	**4.04**	**2.06**	**2.00**	**4.09**	**2.22**	**77.31**	**2.86**	**4.05**	**67.34**	**3.92**	**5.75**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2024	4/5/2024	5	5	
2	Grading	Grading	4/8/2024	4/17/2024	5	8	
3	Building Construction	Building Construction	4/18/2024	3/5/2025	5	230	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	3/6/2025	3/31/2025	5	18	
5	Architectural Coating	Architectural Coating	4/1/2025	4/24/2025	5	18	

Acres of Grading (Site Preparation Phase): 5

Acres of Grading (Grading Phase): 5

Acres of Paving: 0

Residential Indoor: 251,910; Residential Outdoor: 83,970; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Merced City College Student Housing Project v5 - Merced County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	2.00	1,008.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	2.00	1,008.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	94.00	16.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	19.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0483	0.0000	0.0483	0.0252	0.0000	0.0252	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6500e-003	0.0679	0.0458	1.0000e-004		3.0700e-003	3.0700e-003		2.8300e-003	2.8300e-003	0.0000	8.3643	8.3643	2.7100e-003	0.0000	8.4319
Total	**6.6500e-003**	**0.0679**	**0.0458**	**1.0000e-004**	**0.0483**	**3.0700e-003**	**0.0513**	**0.0252**	**2.8300e-003**	**0.0280**	**0.0000**	**8.3643**	**8.3643**	**2.7100e-003**	**0.0000**	**8.4319**

Merced City College Student Housing Project v5 - Merced County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0700e-003	0.0620	0.0134	2.9000e-004	8.6200e-003	6.1000e-004	9.2300e-003	2.3700e-003	5.9000e-004	2.9600e-003	0.0000	27.6292	27.6292	7.0000e-005	4.3400e-003	28.9254
Vendor	1.0000e-005	2.3000e-004	7.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0961	0.0961	0.0000	1.0000e-005	0.1003
Worker	1.5000e-004	1.0000e-004	1.2200e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2940	0.2940	1.0000e-005	1.0000e-005	0.2969
Total	**1.2300e-003**	**0.0623**	**0.0146**	**2.9000e-004**	**9.0100e-003**	**6.1000e-004**	**9.6200e-003**	**2.4800e-003**	**5.9000e-004**	**3.0700e-003**	**0.0000**	**28.0193**	**28.0193**	**8.0000e-005**	**4.3600e-003**	**29.3227**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0188	0.0000	0.0188	9.8200e-003	0.0000	9.8200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1600e-003	5.0400e-003	0.0522	1.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	8.3643	8.3643	2.7100e-003	0.0000	8.4319
Total	**1.1600e-003**	**5.0400e-003**	**0.0522**	**1.0000e-004**	**0.0188**	**1.6000e-004**	**0.0190**	**9.8200e-003**	**1.6000e-004**	**9.9800e-003**	**0.0000**	**8.3643**	**8.3643**	**2.7100e-003**	**0.0000**	**8.4319**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0700e-003	0.0620	0.0134	2.9000e-004	8.6200e-003	6.1000e-004	9.2300e-003	2.3700e-003	5.9000e-004	2.9600e-003	0.0000	27.6292	27.6292	7.0000e-005	4.3400e-003	28.9254
Vendor	1.0000e-005	2.3000e-004	7.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0961	0.0961	0.0000	1.0000e-005	0.1003
Worker	1.5000e-004	1.0000e-004	1.2200e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2940	0.2940	1.0000e-005	1.0000e-005	0.2969
Total	**1.2300e-003**	**0.0623**	**0.0146**	**2.9000e-004**	**9.0100e-003**	**6.1000e-004**	**9.6200e-003**	**2.4800e-003**	**5.9000e-004**	**3.0700e-003**	**0.0000**	**28.0193**	**28.0193**	**8.0000e-005**	**4.3600e-003**	**29.3227**

3.3 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0272	0.0000	0.0272	0.0136	0.0000	0.0136	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1298	0.1111	2.5000e-004		5.3500e-003	5.3500e-003		4.9300e-003	4.9300e-003	0.0000	21.8611	21.8611	7.0700e-003	0.0000	22.0379
Total	**0.0129**	**0.1298**	**0.1111**	**2.5000e-004**	**0.0272**	**5.3500e-003**	**0.0326**	**0.0136**	**4.9300e-003**	**0.0185**	**0.0000**	**21.8611**	**21.8611**	**7.0700e-003**	**0.0000**	**22.0379**

Merced City College Student Housing Project v5 - Merced County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0700e-003	0.0620	0.0134	2.9000e-004	8.6200e-003	6.1000e-004	9.2300e-003	2.3700e-003	5.9000e-004	2.9600e-003	0.0000	27.6292	27.6292	7.0000e-005	4.3400e-003	28.9254
Vendor	1.0000e-005	3.6000e-004	1.1000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1537	0.1537	0.0000	2.0000e-005	0.1605
Worker	2.7000e-004	1.8000e-004	2.1600e-003	1.0000e-005	6.4000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5227	0.5227	2.0000e-005	2.0000e-005	0.5279
Total	**1.3500e-003**	**0.0626**	**0.0156**	**3.0000e-004**	**9.3100e-003**	**6.1000e-004**	**9.9300e-003**	**2.5600e-003**	**5.9000e-004**	**3.1500e-003**	**0.0000**	**28.3056**	**28.3056**	**9.0000e-005**	**4.3800e-003**	**29.6138**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0106	0.0000	0.0106	5.3000e-003	0.0000	5.3000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0500e-003	0.0132	0.1323	2.5000e-004		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	21.8611	21.8611	7.0700e-003	0.0000	22.0379
Total	**3.0500e-003**	**0.0132**	**0.1323**	**2.5000e-004**	**0.0106**	**4.1000e-004**	**0.0110**	**5.3000e-003**	**4.1000e-004**	**5.7100e-003**	**0.0000**	**21.8611**	**21.8611**	**7.0700e-003**	**0.0000**	**22.0379**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0700e-003	0.0620	0.0134	2.9000e-004	8.6200e-003	6.1000e-004	9.2300e-003	2.3700e-003	5.9000e-004	2.9600e-003	0.0000	27.6292	27.6292	7.0000e-005	4.3400e-003	28.9254
Vendor	1.0000e-005	3.6000e-004	1.1000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1537	0.1537	0.0000	2.0000e-005	0.1605
Worker	2.7000e-004	1.8000e-004	2.1600e-003	1.0000e-005	6.4000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5227	0.5227	2.0000e-005	2.0000e-005	0.5279
Total	**1.3500e-003**	**0.0626**	**0.0156**	**3.0000e-004**	**9.3100e-003**	**6.1000e-004**	**9.9300e-003**	**2.5600e-003**	**5.9000e-004**	**3.1500e-003**	**0.0000**	**28.3056**	**28.3056**	**9.0000e-005**	**4.3800e-003**	**29.6138**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1354	1.2368	1.4874	2.4800e-003		0.0564	0.0564		0.0531	0.0531	0.0000	213.3012	213.3012	0.0504	0.0000	214.5622
Total	**0.1354**	**1.2368**	**1.4874**	**2.4800e-003**		**0.0564**	**0.0564**		**0.0531**	**0.0531**	**0.0000**	**213.3012**	**213.3012**	**0.0504**	**0.0000**	**214.5622**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6700e-003	0.0663	0.0207	3.0000e-004	9.7500e-003	4.4000e-004	0.0102	2.8200e-003	4.2000e-004	3.2300e-003	0.0000	28.2853	28.2853	1.0000e-004	4.2000e-003	29.5395
Worker	0.0290	0.0197	0.2339	6.0000e-004	0.0690	3.9000e-004	0.0694	0.0183	3.6000e-004	0.0187	0.0000	56.5066	56.5066	1.8600e-003	1.7100e-003	57.0622
Total	**0.0307**	**0.0860**	**0.2546**	**9.0000e-004**	**0.0787**	**8.3000e-004**	**0.0795**	**0.0212**	**7.8000e-004**	**0.0219**	**0.0000**	**84.7919**	**84.7919**	**1.9600e-003**	**5.9100e-003**	**86.6016**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0302	0.2056	1.6063	2.4800e-003		3.7500e-003	3.7500e-003		3.7500e-003	3.7500e-003	0.0000	213.3009	213.3009	0.0504	0.0000	214.5619
Total	**0.0302**	**0.2056**	**1.6063**	**2.4800e-003**		**3.7500e-003**	**3.7500e-003**		**3.7500e-003**	**3.7500e-003**	**0.0000**	**213.3009**	**213.3009**	**0.0504**	**0.0000**	**214.5619**

Merced City College Student Housing Project v5 - Merced County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6700e-003	0.0663	0.0207	3.0000e-004	9.7500e-003	4.4000e-004	0.0102	2.8200e-003	4.2000e-004	3.2300e-003	0.0000	28.2853	28.2853	1.0000e-004	4.2000e-003	29.5395
Worker	0.0290	0.0197	0.2339	6.0000e-004	0.0690	3.9000e-004	0.0694	0.0183	3.6000e-004	0.0187	0.0000	56.5066	56.5066	1.8600e-003	1.7100e-003	57.0622
Total	**0.0307**	**0.0860**	**0.2546**	**9.0000e-004**	**0.0787**	**8.3000e-004**	**0.0795**	**0.0212**	**7.8000e-004**	**0.0219**	**0.0000**	**84.7919**	**84.7919**	**1.9600e-003**	**5.9100e-003**	**86.6016**

3.4 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0315	0.2868	0.3700	6.2000e-004		0.0121	0.0121		0.0114	0.0114	0.0000	53.3415	53.3415	0.0125	0.0000	53.6550
Total	**0.0315**	**0.2868**	**0.3700**	**6.2000e-004**		**0.0121**	**0.0121**		**0.0114**	**0.0114**	**0.0000**	**53.3415**	**53.3415**	**0.0125**	**0.0000**	**53.6550**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-004	0.0165	5.0100e-003	7.0000e-005	2.4400e-003	1.1000e-004	2.5400e-003	7.0000e-004	1.0000e-004	8.1000e-004	0.0000	6.9450	6.9450	2.0000e-005	1.0300e-003	7.2525
Worker	6.6700e-003	4.3200e-003	0.0536	1.5000e-004	0.0172	9.0000e-005	0.0173	4.5800e-003	8.0000e-005	4.6700e-003	0.0000	13.7806	13.7806	4.2000e-004	3.9000e-004	13.9081
Total	**7.0700e-003**	**0.0208**	**0.0586**	**2.2000e-004**	**0.0197**	**2.0000e-004**	**0.0199**	**5.2800e-003**	**1.8000e-004**	**5.4800e-003**	**0.0000**	**20.7256**	**20.7256**	**4.4000e-004**	**1.4200e-003**	**21.1606**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.5400e-003	0.0514	0.4016	6.2000e-004		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	53.3414	53.3414	0.0125	0.0000	53.6549
Total	**7.5400e-003**	**0.0514**	**0.4016**	**6.2000e-004**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**53.3414**	**53.3414**	**0.0125**	**0.0000**	**53.6549**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-004	0.0165	5.0100e-003	7.0000e-005	2.4400e-003	1.1000e-004	2.5400e-003	7.0000e-004	1.0000e-004	8.1000e-004	0.0000	6.9450	6.9450	2.0000e-005	1.0300e-003	7.2525
Worker	6.6700e-003	4.3200e-003	0.0536	1.5000e-004	0.0172	9.0000e-005	0.0173	4.5800e-003	8.0000e-005	4.6700e-003	0.0000	13.7806	13.7806	4.2000e-004	3.9000e-004	13.9081
Total	**7.0700e-003**	**0.0208**	**0.0586**	**2.2000e-004**	**0.0197**	**2.0000e-004**	**0.0199**	**5.2800e-003**	**1.8000e-004**	**5.4800e-003**	**0.0000**	**20.7256**	**20.7256**	**4.4000e-004**	**1.4200e-003**	**21.1606**

3.5 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2400e-003	0.0772	0.1312	2.1000e-004		3.7700e-003	3.7700e-003		3.4700e-003	3.4700e-003	0.0000	18.0173	18.0173	5.8300e-003	0.0000	18.1630
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.2400e-003**	**0.0772**	**0.1312**	**2.1000e-004**		**3.7700e-003**	**3.7700e-003**		**3.4700e-003**	**3.4700e-003**	**0.0000**	**18.0173**	**18.0173**	**5.8300e-003**	**0.0000**	**18.1630**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	8.1000e-004	2.5000e-004	0.0000	1.2000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3397	0.3397	0.0000	5.0000e-005	0.3547
Worker	4.2000e-004	2.7000e-004	3.3500e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0800e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.8605	0.8605	3.0000e-005	2.0000e-005	0.8685
Total	**4.4000e-004**	**1.0800e-003**	**3.6000e-003**	**1.0000e-005**	**1.2000e-003**	**2.0000e-005**	**1.2000e-003**	**3.2000e-004**	**2.0000e-005**	**3.3000e-004**	**0.0000**	**1.2002**	**1.2002**	**3.0000e-005**	**7.0000e-005**	**1.2232**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5200e-003	0.0109	0.1557	2.1000e-004		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	18.0173	18.0173	5.8300e-003	0.0000	18.1630
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5200e-003**	**0.0109**	**0.1557**	**2.1000e-004**		**3.4000e-004**	**3.4000e-004**		**3.4000e-004**	**3.4000e-004**	**0.0000**	**18.0173**	**18.0173**	**5.8300e-003**	**0.0000**	**18.1630**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	8.1000e-004	2.5000e-004	0.0000	1.2000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3397	0.3397	0.0000	5.0000e-005	0.3547
Worker	4.2000e-004	2.7000e-004	3.3500e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0800e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.8605	0.8605	3.0000e-005	2.0000e-005	0.8685
Total	**4.4000e-004**	**1.0800e-003**	**3.6000e-003**	**1.0000e-005**	**1.2000e-003**	**2.0000e-005**	**1.2000e-003**	**3.2000e-004**	**2.0000e-005**	**3.3000e-004**	**0.0000**	**1.2002**	**1.2002**	**3.0000e-005**	**7.0000e-005**	**1.2232**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3892					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5400e-003	0.0103	0.0163	3.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	2.2979	2.2979	1.3000e-004	0.0000	2.3011
Total	**0.3907**	**0.0103**	**0.0163**	**3.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.3000e-004**	**0.0000**	**2.3011**

Merced City College Student Housing Project v5 - Merced County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	8.1000e-004	2.5000e-004	0.0000	1.2000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3397	0.3397	0.0000	5.0000e-005	0.3547
Worker	5.3000e-004	3.4000e-004	4.2400e-003	1.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.0900	1.0900	3.0000e-005	3.0000e-005	1.1000
Total	**5.5000e-004**	**1.1500e-003**	**4.4900e-003**	**1.0000e-005**	**1.4800e-003**	**2.0000e-005**	**1.4900e-003**	**3.9000e-004**	**2.0000e-005**	**4.1000e-004**	**0.0000**	**1.4297**	**1.4297**	**3.0000e-005**	**8.0000e-005**	**1.4548**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3892					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	1.1600e-003	0.0165	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.2979	2.2979	1.3000e-004	0.0000	2.3011
Total	**0.3895**	**1.1600e-003**	**0.0165**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.2979**	**2.2979**	**1.3000e-004**	**0.0000**	**2.3011**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	8.1000e-004	2.5000e-004	0.0000	1.2000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3397	0.3397	0.0000	5.0000e-005	0.3547
Worker	5.3000e-004	3.4000e-004	4.2400e-003	1.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.0900	1.0900	3.0000e-005	3.0000e-005	1.1000
Total	**5.5000e-004**	**1.1500e-003**	**4.4900e-003**	**1.0000e-005**	**1.4800e-003**	**2.0000e-005**	**1.4900e-003**	**3.9000e-004**	**2.0000e-005**	**4.1000e-004**	**0.0000**	**1.4297**	**1.4297**	**3.0000e-005**	**8.0000e-005**	**1.4548**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3310	0.7882	3.1241	7.9600e-003	0.7223	8.3500e-003	0.7306	0.1937	7.8700e-003	0.2016	0.0000	754.3735	754.3735	0.0355	0.0495	770.0171
Unmitigated	0.3340	0.8006	3.1731	8.1200e-003	0.7370	8.5100e-003	0.7455	0.1977	8.0200e-003	0.2057	0.0000	769.1820	769.1820	0.0359	0.0504	785.0861

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	707.20	638.30	531.70	1,958,173	1,919,009
Total	707.20	638.30	531.70	1,958,173	1,919,009

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	46.90	17.40	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.523140	0.047841	0.156254	0.146076	0.028387	0.007025	0.014133	0.049672	0.000816	0.000458	0.021177	0.002172	0.002848

5.0 Energy Detail

Historical Energy Use: N

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.6187	0.6187	7.6200e-003	9.2000e-004	1.0843
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.6234	0.6234	7.6800e-003	9.3000e-004	1.0926
NaturalGas Mitigated	7.1300e-003	0.0609	0.0259	3.9000e-004		4.9200e-003	4.9200e-003		4.9200e-003	4.9200e-003	0.0000	70.5453	70.5453	1.3500e-003	1.2900e-003	70.9645
NaturalGas Unmitigated	8.2600e-003	0.0706	0.0300	4.5000e-004		5.7100e-003	5.7100e-003		5.7100e-003	5.7100e-003	0.0000	81.7247	81.7247	1.5700e-003	1.5000e-003	82.2104

Merced City College Student Housing Project v5 - Merced County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.53146e+006	8.2600e-003	0.0706	0.0300	4.5000e-004		5.7100e-003	5.7100e-003		5.7100e-003	5.7100e-003	0.0000	81.7247	81.7247	1.5700e-003	1.5000e-003	82.2104
Total		**8.2600e-003**	**0.0706**	**0.0300**	**4.5000e-004**		**5.7100e-003**	**5.7100e-003**		**5.7100e-003**	**5.7100e-003**	**0.0000**	**81.7247**	**81.7247**	**1.5700e-003**	**1.5000e-003**	**82.2104**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.32197e+006	7.1300e-003	0.0609	0.0259	3.9000e-004		4.9200e-003	4.9200e-003		4.9200e-003	4.9200e-003	0.0000	70.5453	70.5453	1.3500e-003	1.2900e-003	70.9645
Total		**7.1300e-003**	**0.0609**	**0.0259**	**3.9000e-004**		**4.9200e-003**	**4.9200e-003**		**4.9200e-003**	**4.9200e-003**	**0.0000**	**70.5453**	**70.5453**	**1.3500e-003**	**1.2900e-003**	**70.9645**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	512823	0.6234	7.6800e-003	9.3000e-004	1.0926
Total		**0.6234**	**7.6800e-003**	**9.3000e-004**	**1.0926**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	508942	0.6187	7.6200e-003	9.2000e-004	1.0843
Total		**0.6187**	**7.6200e-003**	**9.2000e-004**	**1.0843**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5231	0.0597	0.9850	3.6000e-004		9.2800e-003	9.2800e-003		9.2800e-003	9.2800e-003	0.0000	57.8937	57.8937	2.5900e-003	1.0300e-003	58.2661
Unmitigated	0.5594	0.0597	0.9850	3.6000e-004		9.2800e-003	9.2800e-003		9.2800e-003	9.2800e-003	0.0000	57.8937	57.8937	2.5900e-003	1.0300e-003	58.2661

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0389					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4858					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.6900e-003	0.0486	0.0207	3.1000e-004		3.9300e-003	3.9300e-003		3.9300e-003	3.9300e-003	0.0000	56.3170	56.3170	1.0800e-003	1.0300e-003	56.6516
Landscaping	0.0290	0.0111	0.9644	5.0000e-005		5.3500e-003	5.3500e-003		5.3500e-003	5.3500e-003	0.0000	1.5767	1.5767	1.5100e-003	0.0000	1.6145
Total	**0.5594**	**0.0597**	**0.9850**	**3.6000e-004**		**9.2800e-003**	**9.2800e-003**		**9.2800e-003**	**9.2800e-003**	**0.0000**	**57.8937**	**57.8937**	**2.5900e-003**	**1.0300e-003**	**58.2661**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0389					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4495					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.6900e-003	0.0486	0.0207	3.1000e-004		3.9300e-003	3.9300e-003		3.9300e-003	3.9300e-003	0.0000	56.3170	56.3170	1.0800e-003	1.0300e-003	56.6516
Landscaping	0.0290	0.0111	0.9644	5.0000e-005		5.3500e-003	5.3500e-003		5.3500e-003	5.3500e-003	0.0000	1.5767	1.5767	1.5100e-003	0.0000	1.6145
Total	**0.5231**	**0.0597**	**0.9850**	**3.6000e-004**		**9.2800e-003**	**9.2800e-003**		**9.2800e-003**	**9.2800e-003**	**0.0000**	**57.8937**	**57.8937**	**2.5900e-003**	**1.0300e-003**	**58.2661**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

Merced City College Student Housing Project v5 - Merced County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.2156	0.2216	5.3100e-003	9.3388
Unmitigated	2.7656	0.2770	6.6300e-003	11.6665

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	8.47002 / 5.3398	2.7656	0.2770	6.6300e-003	11.6665
Total		**2.7656**	**0.2770**	**6.6300e-003**	**11.6665**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	6.77602 / 5.01407	2.2156	0.2216	5.3100e-003	9.3388
Total		**2.2156**	**0.2216**	**5.3100e-003**	**9.3388**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.2139	0.0717	0.0000	3.0074
Unmitigated	12.1389	0.7174	0.0000	30.0735

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	59.8	12.1389	0.7174	0.0000	30.0735
Total		**12.1389**	**0.7174**	**0.0000**	**30.0735**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	5.98	1.2139	0.0717	0.0000	3.0074
Total		**1.2139**	**0.0717**	**0.0000**	**3.0074**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix C
Fuel Use Calculations

Merced City College Project - Project Fuel Use Calculations

Diesel Emissions		
Offroad Equipment	319.1511	MT
Onroad (Haul & Vendor Trips)	95.613	MT
Total Diesel Emissions	414.7641	MT
	1000	kg/MT
Total CO2 Emissions	414764.1	kg
Diesel fuel combustion rate	10.21	kg/gallon
Diesel fuel consumption	40623.32	gallons
Gasoline Emissions		
Worker Trips	73.7636	MT
	1000	kg/MT
Total Emissions	73763.6	kg
Gasoline combustion rate	8.78	kg/gallon
Gasoline consumption	8401.321	gallons

Note: Combustion rates taken from The Climate Registry 2020 default emission factors (Table 2.1)

Appendix D
Noise Modeling Data

D.1 Noise Modeling Outputs

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/07/2022
Case Description: Merced Housing

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
El Portal	Residential	55.0	55.0	55.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		100.0	0.0
Dozer	No	40		81.7	100.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	79.0	75.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	75.6	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	79.0	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Off Campus	Residential	55.0	55.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		1820.0	0.0
Dozer	No	40		81.7	1820.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	53.8	49.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	50.4	46.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	53.8	51.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

D.2 Construction Vibration Calculations

Vibration propogation from Construction Equipment

Formula from FTA, 2018 = PPVequip = PPVref x (25/D)^1.5
where

Receptor 1: El Portal Student Housing

		PPV@25ft
PPV refs @ 25 ft =	pile driver (impact)	0.65
	Vibratory Roller	0.21
	Bulldozer (large)	0.089
	Truck(loaded)	0.076
	Jackhammer	0.035
	Dozer (Small)	0.003

Enter distance = 100 Adjacent Buildings

Resultant PPV =	pile driver (impact)	0.08125
	Vibratory Roller	0.02625
	Bulldozer (large)	0.011125
	Truck(loaded)	0.0095
	Jackhammer	0.004375

	Lv@25 ft
pile driver (impact)	104
Vibratory Roller	94
Bulldozer (large)	87
Truck(loaded)	86
Jackhammer	79
Dozer (Small)	53

Formula from FTA 2006 = Lv(D) = Lv(25 ft) – 30log(D/25)

Resultant Lv =	pile driver (impact)	85.9382
	Vibratory Roller	75.9382
	Bulldozer (large)	68.9382
	Truck(loaded)	67.9382
	Jackhammer	60.9382
	Dozer (Small)	34.9382

D.3 Traffic Noise Calculations

Existing

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto k/h		MT k/h		HT k/h		NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL 15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak																							
from:		to:		%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
Bellevue	Golf	Lake	734	95	697.3	3	22.02	2	14.68	55	88	55	88	55	88	68.4	60.5	64.2				50.7	166.2
Lake Rd	Bellevue E.	Cardella	321	95	304.95	3	9.63	2	6.42	55	88	55	88	55	88	64.8	56.9	60.6	70.3	40	66.0	22.2	72.7
Lake Rd	Bellevue	Ranchers	356	95	338.2	3	10.68	2	7.12	55	88	55	88	55	88	65.3	57.4	61.1	66.7	40	62.4	24.6	80.6
																			67.1	40	62.9		

Assumptions: AM peak hour traffic data from Fehr & Peers

Existing + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto k/h		MT k/h		HT k/h		NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL 15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak																							
from:				%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
Bellevue	Golf	Lake	789.3	95	749.83	3	23.68	2	15.79	55	88	55	88	55	88	68.7	60.8	64.5				54.5	178.8
Lake Rd	Bellevue E.	Cardella	356.4	95	338.54	3	10.69	2	7.127	55	88	55	88	55	88	65.3	57.4	61.1	70.6	40	66.3	24.6	80.7
Lake Rd	Bellevue	Ranchers	356	95	338.2	3	10.68	2	7.12	55	88	55	88	55	88	65.3	57.4	61.1	67.1	40	62.9	24.6	80.6

Assumptions: AM peak hour traffic data from Fehr & Peers

Cumulative (Inclusive of University Vista)

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto k/h		MT k/h		HT k/h		NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL 15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak																							
from:				%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
Bellevue	Golf	Lake	2642	95	2509.9	3	79.26	2	52.84	55	88	55	88	55	88	74.0	66.1	69.8				182.4	598.3
Lake Rd	Bellevue E.	Cardella	2499	95	2374.1	3	74.97	2	49.98	55	88	55	88	55	88	73.7	65.8	69.5	75.8	40	71.6	172.5	566.0
Lake Rd	Bellevue	Ranchers	1584	95	1504.8	3	47.52	2	31.68	55	88	55	88	55	88	71.7	63.9	67.6	75.6	650	59.2	109.3	358.7

Assumptions: AM peak hour traffic data from Fehr & Peers

Cumulative + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE % Auto		MT		HT		VEHICLE SPEED Auto k/h		MT k/h		HT k/h		NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL 15 meters from	Receptor Dist. from Roadway	Adjusted Noise Level	Distance from Roadway to 65 dBA	Distance from Roadway to 65 dBA
Calveno Peak																							
from:				%	Auto	%	MT	%	HT										roadway center)	Center (m.)	(dBA)	(m.)	(ft)
Bellevue	Golf	Lake	2697	95	2562.4	3	80.92	2	53.95	55	88	55	88	55	88	74.0	66.2	69.9				186.2	610.9
Lake Rd	Bellevue E.	Cardella	2534	95	2407.6	3	76.03	2	50.69	55	88	55	88	55	88	73.8	65.9	69.6	75.9	40	71.7	174.9	574.0
Lake Rd	Bellevue	Ranchers	1584	95	1504.8	3	47.52	2	31.68	55	88	55	88	55	88	71.7	63.9	67.6	75.7	650	59.3	109.3	358.7

Assumptions: AM peak hour traffic data from Fehr & Peers

Appendix E
Vehicle Miles Traveled Analysis

FEHR PEERS

Memorandum

Date: November 8, 2022

To: Paul Stephenson, ESA

From: Ellen Poling and Fatemeh Ranaiefar, Fehr & Peers

Subject: VMT Impact Analysis for the UCM/MCC "Promise" Intersegmental Housing Project

WC22-3931.00

I. Introduction

This memorandum presents the analysis and results of the vehicle miles of travel (VMT) Impact analysis conducted for the proposed UCM/MCC "Promise" Intersegmental Student Housing Project (Project), which is proposed to be located on the UC Merced campus. The Project consists of the construction and occupancy of a housing building that would provide 490 students beds that would be used by students enrolled at Merced College. The analysis is consistent with the requirements of California Senate Bill 743 (2013) and associated State Office of Planning and Research guidance on its implementation within CEQA.

II. SB 743 and VMT AnalysisGuidance

On September 27, 2013, SB 743 was signed into law, building on legislative changes from SB 375, Assembly Bill (AB) 32, and AB 1358. SB 743 began the process to modify how impacts to the transportation system are assessed for purposes of CEQA compliance. SB 743 created a shift in transportation impact analysis under CEQA from a focus on automobile delay, as measured by level of service and similar metrics, to a focus on reducing VMT.

SB 743 also required the Governor's Office of Planning and Research (OPR) to update the State CEQA Guidelines and establish criteria for determining the significance of transportation impacts based on VMT. The statute states that upon certification of the new guidelines, automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA, except in locations specifically identified in the new guidelines, if any.

The new criteria in the State CEQA Guidelines Section 15064.3 were adopted in December 2018. Section 15064.3 states that VMT is the most appropriate metric to assess transportation impacts and that, with limited exceptions, a project's effect on automobile delay does not constitute a significant environmental impact. The revised provisions under CEQA became effective July 1, 2020.

In addition to updating the State CEQA Guidelines, OPR published additional technical guidance in *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) (Technical Advisory). The Technical Advisory provides background on the intent of SB 743, technical considerations in the selection of VMT metrics, methodology, and significance thresholds, criteria which could be used to screen projects out from a VMT impact analysis, and information on VMT mitigation.

The Technical Advisory sets forth guidance regarding metrics that may be calculated to evaluate VMT impacts from three types of land uses: residential, office, and retail. Institutional land use, such as a university campus, is not specifically addressed in the advisory. However, for purposes of the analysis in the memo, the UC Merced campus is treated as a mixed-use development with its residential land uses (student housing) corresponding to the residential land uses addressed in the Technical Advisory and its non-residential land uses (i.e., teaching, research, and student support facilities) corresponding to office use in the Technical Advisory. Retail land use is not applicable to the campus.

With regard to metrics, the Technical Advisory recommends the use of VMT metrics that reflect the efficiency of a project and are expressed in per capita terms. For residential land uses such as the Project, the Technical Advisory suggests a per capita metric based on home-based vehicle trips, i.e., the number of daily trips that a resident makes from place of residence to various destinations each day and the distance traveled in making those trips.

The Technical Advisory does not mandate the use of specific significance thresholds, but recommends that, for residential projects, a project VMT per resident that is 15 percent below that of *existing* residential development in the project's study area may be a reasonable threshold for determining the significance of a residential project's transportation impacts.

III. VMT Methodology

Travel Demand Model

The Merced County Association of Governments (MCAG) Three-County Regional Travel Demand Model (MCAG Model) was used as the basis of estimating regional and project total VMT and VMT per capita. The MCAG Model includes a base year of 2018 and multiple forecast years, including 2020, 2030, 2035 and 2042. The MCAG Model contains land use, roadway network, and travel characteristics information for Merced, Stanislaus, and San Joaquin Counties, and divides

the three-county area into several traffic analysis zones (TAZs). The 2020 model was used as the baseline model for this analysis. However, the 2020 model was adjusted to include current fall 2022 campus population and housing numbers, as described further below.

The model allows calculation of VMT based on the trip generation rate of each land use and the trip lengths for each trip. The four basic steps are as follows:

Trip Generation: The generation of trip origins and destinations of different land uses within each TAZ by trip purpose, as a function of variables such as land use type, demographics, and other socioeconomic factors.

Trip Distribution: The matching of trip origins and destinations, taking into account the relative activity level at each location and the travel times between each, among other factors.

Travel Mode Choice: The proportion of trips between each origin and destination that uses a particular transportation mode.

Route Assignment: The allocation of trips between each origin and destination by a particular mode to a route on the roadway network.

The models were reviewed and adjusted as described below to facilitate the VMT analysis.

MCAG Model Land Use: 2020/2022 Baseline No Project Scenario

The MCAG Model land uses for the baseline case reflect the MCAG Model 2020 land uses outside of the UC Merced campus. However, an examination of the land use data in the model for the TAZs that contain the campus revealed that the model does not contain the correct number of current campus employees and students. Therefore, the information in the model was updated to reflect the correct campus populations under current conditions (year 2022). Since the model does not have a specific student housing land use category, the trip generation characteristics of existing on-campus housing were modified to reflect on-campus housing trip generation rates based on observed campus housing trip generation.

Table 1 shows the 2020/2022 Baseline (No Project) housing, population, and employment for UC Merced, the City of Merced and Merced County, with the campus numbers adjusted, as noted above, to reflect fall 2022 values.

Table 1: MCAG Model: Regional Housing, Population, and Employment for 2020/2022 Baseline (No Project)

Area	Households	Population	Employees
2020/2022 Baseline			
UC Merced Campus	4,123 (student beds)	9,104 (students)	1,269
City of Merced	30,806	79,219	33,695
Merced County	91,444	243,882	87,067

Source: MCAG Three County Model, October 2022
Note: The values for the County include those within the City of Merced and the UC Merced campus.

MCAG Model Roadway Network: 2020 Baseline (No Project)

The roadway network in the MCAG Model for the year 2020 is consistent with the network in place in 2020, including the completion of Campus Parkway between State Route 99 and Childs Avenue.

Analysis Scenarios

The campus populations for the baseline year (2022), the Project, and Baseline With Project are shown in **Table 3**. Note that, while the students associated with the Project are listed as on-campus student residents, they were analyzed as residents of traditional multi-family housing in which residents travel off-campus for school, employment and other trip purposes, as opposed to students who are enrolled at UC Merced and live in on-campus housing, for which more trip "internalization" within the campus is expected.

Table 3: UC Merced Campus Populations

Scenario	On-Campus Students	Off-Campus Students	Total Students	Faculty and Staff
Baseline (2022)	4,123	4,981	9,104	1,269
Housing Project	490	0	490	0
Baseline + Project	4,613	4,981	9,594	1,269

Source: UC Merced, October 2022

The following scenarios were analyzed:

- Baseline (2022) No Project
- Baseline (2022) With Project

COVID-19 Considerations

The Coronavirus disease 2019 (COVID-19) pandemic introduced a substantial amount of uncertainty in human lives. The pandemic directly affected human behavior, requiring people to temporarily reduce mobility and make other changes to the manner in which they live. Indirectly it affected the economy resulting in business closures, labor shortages, supply chain interruptions, and other issues. As a result of the pandemic, institutions like UC Merced and Merced College Community District will likely consider operational changes such as increases in telework and remote learning. Similarly, it is reasonable to assume that the travel behaviors of the rest of the regional population will likely change in the post pandemic world, including more remote learning, work, and online shopping. The analysis of VMT in this section is model-based and reflects trip generation rates and travel behaviors that are pre-pandemic. The net effect of the pandemic on educational institutions as well as on the regional population cannot be predicted at this point in time without speculation. However, the analysis presented in this memorandum reflects a good faith and reasonable effort to analyze VMT impacts with the best available analysis tools and assumptions.

IV. VMT Metrics and Significance Thresholds

This analysis uses the VMT metric and threshold of significance consistent with the recommendations presented in the Technical Advisory and guidance from the University and the project team. **Table 4** presents the metric and significance threshold.

Table 4: VMT Metrics and Significance Threshold

Metric	Significance Threshold
Project home-based VMT per resident	Impact would be less than significant if the Project home-based VMT per resident is at least 15 percent below the existing regional average home-based VMT per resident

Source: Fehr & Peers, October 2022.

The metric in Table 4 is recommended in the Technical Advisory for use in evaluating the transportation impacts of projects involving residential land uses. The concept underlying the metric is to compare the project's transportation efficiency (project VMT per resident), with the existing regional efficiency (regional VMT per resident) and determine whether the project would be more or less efficient than the existing region. If the project is sufficiently more efficient, it would result in a less than significant transportation impact. As noted earlier and in the table above, in order to be considered more efficient and result in a less than significant impact, the project's home-based VMT per resident must be at least 15 percent below the existing regional home-based VMT per resident.

The regional average is defined as the Merced Countywide average. There are substantially different travel and VMT characteristics between the three counties in the MCAG Model, and since the Project site is located in Merced County, and most Project resident travel is assumed to be within Merced County, Merced County was chosen as the regional comparison metric. The average VMT per resident includes all home-based trips, i.e., trips beginning or ending at the home/place of residence.

To evaluate the transportation impacts of the project, the Merced College students to be housed in the Project were treated as a residential population and the VMT per resident was assessed relative to the metric in Table 4.

V. Project Impact Analysis

Table 5 presents the VMT results for the Project as compared to the baseline countywide regional average. The Project is estimated to generate 13.8 home-based VMT per resident, as compared to the threshold of significance of 18.79 home-based VMT per resident, which is 15 percent below the Merced Countywide regional average. Therefore, the Project would have a less than significant impact on VMT. This result is consistent with expectations that the Project residents would be able to use campus transit services (CatTracks and The Bus) to travel to and from school at Merced College, as well as to travel to employment sites and other destinations in greater Merced. While some off-campus vehicle travel is to be expected, the combination of these transit services and the availability of on-campus amenities for dining and recreation would contribute to minimizing the need for long vehicular trips by Project residents.

Table 5: Project Residential VMT Compared to Countywide Average

VMT Type	Metric	Baseline (2020/2022) Countywide Average	Project
Residential	Population	243,882	490
	Home-based VMT	5,379,412	6,763
	Home-based VMT per resident	22.10	13.8
	Significance Threshold: Home-based VMT per resident that is 15% below regional average	18.79	---
	Is the Project Home-based VMT per resident at least 15% below regional average?	---	Yes (13.8 < 18.79)

Source: MCAG Three County Model, October 2022

Please contact Ellen Poling if you have any questions about this analysis.

Appendix F

Comments and Response to Comments

Comments and Responses to Comments

On December 23, 2022, UC Merced campus circulated for public and agency review an Initial Study/Proposed Mitigated Negative Declaration (IS/Proposed MND) for the UCM/MCCD "Promise" Intersegmental Student Housing Project ("proposed project"). As required by Section 15073 of the California Environmental Quality Act (CEQA) Guidelines, the IS/Proposed MND was circulated for 30 days ending on January 23, 2023. UC Merced received two comment letters on the IS/Proposed MND. Section 15074(b) of the CEQA Guidelines requires the decision-making body to consider the IS/Proposed MND and comments received on it prior to considering the project for approval. Responses to comments are not required by CEQA, although responses may be provided at the discretion of the lead agency. The University has prepared responses to the comments received on the IS/Proposed MND.

Comments were received from the following two agencies during the public review period:

- Letter 1: California Department of Toxic Substances Control (DTSC)
- Letter 2: Merced Irrigation District (MID)

No comments were received from any members of the public. These two comment letters and the responses to the comments are provided on the following pages.

Letter 1

Department of Toxic Substances Control

Yana Garcia
Secretary for
Environmental Protection

Meredith Williams, Ph.D.
Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

January 20, 2023

Mr. Phillip Woods
University of California
5200 North Lake Road
Merced, CA 95343
CEQA@ucmerced.edu

MITIGATED NEGATIVE DECLARATION FOR UCM/MCCD "PROMISE" INTERSEGMENTAL STUDENT HOUSING PROJECT – DATED DECEMBER 2022 (STATE CLEARINGHOUSE NUMBER: 2022120625)

Dear Mr. Woods:

The Department of Toxic Substances Control (DTSC) received a Mitigated Negative Declaration (MND) for the UCM/MCCD "Promise" Intersegmental Student Housing Project (Project). The Lead Agency is receiving this notice from DTSC because the Project includes one or more of the following: groundbreaking activities, importation of backfill soil, and/or work on or in close proximity to an agricultural or former agricultural site.

DTSC recommends that the following issues be evaluated in the Hazards and Hazardous Materials section of the MND:

1. The MND references the listing compiled in accordance with California Government Code Section 65962.5, commonly known as the Cortese List. Not all sites impacted by hazardous waste or hazardous substances will be found on the Cortese List. DTSC recommends that the Hazards and Hazardous Materials section of the MND address actions to be taken for any sites impacted by hazardous waste or hazardous substances within the Project area, not just those found on the Cortese List. DTSC recommends consulting with other agencies that may provide oversight to hazardous waste facilities or sites impacted with hazardous substances in order to determine a comprehensive listing of all sites impacted by hazardous waste or substances within the Project area. DTSC

1-1

Letter 1

hazardous waste facilities and sites with known or suspected contamination issues can be found on DTSC's EnviroStor data management system. The EnviroStor Map feature can be used to locate hazardous waste facilities and sites with known or suspected contamination issues for a county, city, or a specific address. 1-1 (cont.)

2. A State of California environmental regulatory agency such as DTSC, a Regional Water Quality Control Board (RWQCB), or a local agency that meets the requirements of Health and Safety Code section 101480 should provide regulatory concurrence that the Project site is safe for construction and the proposed use. 1-2

3. The MND should acknowledge the potential for historic or future activities on or near the Project site to result in the release of hazardous wastes/substances on the Project site. In instances in which releases have occurred or may occur, further studies should be carried out to delineate the nature and extent of the contamination, and the potential threat to public health and/or the environment should be evaluated. The MND should also identify the mechanism(s) to initiate any required investigation and/or remediation and the government agency who will be responsible for providing appropriate regulatory oversight. 1-3

4. If any projects initiated as part of the proposed Project require the importation of soil to backfill any excavated areas, proper sampling should be conducted to ensure that the imported soil is free of contamination. DTSC recommends the imported materials be characterized according to DTSC's 2001 *Information Advisory Clean Imported Fill Material*. 1-4

5. If any sites included as part of the proposed Project have been used for agricultural, weed abatement or related activities, proper investigation for organochlorinated pesticides should be discussed in the MND. DTSC recommends the current and former agricultural lands be evaluated in accordance with DTSC's 2008 *Interim Guidance for Sampling Agricultural Properties (Third Revision)*. 1-5

DTSC appreciates the opportunity to comment on the MND. Should you choose DTSC to provide oversight for any environmental investigations, please visit DTSC's Site Mitigation and Restoration Program page to apply for lead agency oversight. Additional information regarding voluntary agreements with DTSC can be found at DTSC's Brownfield website.

Letter 1

If you have any questions, please contact me at (916) 255-3710 or via email at Gavin.McCreary@dtsc.ca.gov.

Sincerely,

Gavin McCreary, M.S.
Project Manager
Site Evaluation and Remediation Unit
Site Mitigation and Restoration Program
Department of Toxic Substances Control

cc: (via email)

Governor's Office of Planning and Research
State Clearinghouse
State.Clearinghouse@opr.ca.gov

Mr. Dave Kereazis
Office of Planning & Environmental Analysis
Department of Toxic Substances Control
Dave.Kereazis@dtsc.ca.gov

Letter 1 Response **Gavin McCreary, M.S., Department of Toxic Substances Control (DTSC)**
January 20, 2023

1-1 In addition to the Cortese List, the analysis of hazards and hazardous materials section in the Draft IS/MND also consulted with both the EnviroStor database maintained by DTSC and the GeoTracker database maintained by the State Water Resources Control Board. As discussed on pages 81-82 of the Draft IS/MND, the review of these databases found that no known hazardous waste sites are located within 1,000 feet of the project site.

1-2 Health and Safety Code section 101480(b) states that whenever a release of waste occurs and remedial action is required, and that waste release site is not being overseen by the DTSC or regional water quality control board, "a responsible party may request the local officer to oversee the remedial investigation or remedial action, or both." As discussed, above, the project site is not located on the Cortese List and a check of databases found that no known hazardous waste sites are located within 1,000 feet of the project site. As a result, construction of the proposed project would not create a significant hazard to the public or the environment. In the event previously unknown soil and/or groundwater contamination were to be discovered on the project site during ground disturbing activities, the University will comply with all applicable local, state, and federal regulations and requirements, including DTSC rules and regulations, to address those conditions as appropriate.

1-3 The potential for project activities to result in the release of hazardous wastes/substances was addressed in the Draft IS/MND. As discussed on page 81 of the Draft IS/MND, compliance with local, state, and federal regulations would minimize risks associated with the routine transport, use, or disposal of hazardous materials during project construction. Furthermore, as the operation of the proposed project would not involve the routine transport, use, or disposal of hazardous materials, other than cleaning products and maintenance materials, no significant risk to the public or the environment during the project's operational phase is expected.

1-4 The University appreciates the DTSC advisory letter providing suggested guidance for selecting imported fill materials. The University understands that the proposed student housing structure is a sensitive land use and that contaminated materials may not be used as fill for the project site. The University would, as part of their construction specifications, require the construction contractor to ensure that any soil imported to the site originates from a source that is free of contamination.

1-5 Prior to the construction of the UC Merced campus, the campus, including the project site, consisted of grazing lands. The management of grazing lands does not involve the use of organochlorinated pesticides, and thus evaluation of the project site in accordance with DTSC's 2008 *Interim Guidance for Sampling Agricultural Properties (Third Revision)* is not required.

MERCED IRRIGATION DISTRICT
WATER & POWER

January 17, 2023

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

Subject: Comments to Draft IS/MND, UCM/MCC "Promise" Intersegmental Student Housing Project

Dear Mr. Woods:

The Merced Irrigation District (MID) has reviewed the Draft Initial Study/Mitigated Negative Declaration (IS/MND) for the UCM/MCC "Promise" Intersegmental Student Housing Project. The proposed project impacts the following MID facilities:

1. MID operates and maintains a major distribution canal, the Fairfield Canal located within a 150-foot wide permanent easement, recorded in Volume 2299, Page 963, Official Records of Merced County, being within Section 34, T. 6 S., R. 14 E., M.D.B. & M.

2. MID operates and maintains a major distribution canal, the Le Grand Canal, within a 150-foot wide permanent easement, recorded in Volume 2299, Page 963, Official Records of Merced County, being within Section 34 and 35, T. 6 S., R. 14 E., M.D.B. & M.

3. MID operates and maintains the Fairfield Power Plant within a 110-foot wide permanent easement, recorded in Volume 2299, Page 963, Official Records of Merced County, being within Section 34, T. 6 S., R. 14 E., M.D.B. & M.

4. MID operates and maintains Lake Yosemite, a surface water regulating reservoir that is a vital part of MID's distribution system. The lake covers approximately 486 acres, which MID owns in fee. The property was conveyed from Crocker Huffman Land and Water Company to Merced Irrigation District by deed recorded January 18, 1922 in Volume 12, Page 1, Official Records of Merced County. An additional approximately 42 acre parcel, conveyed from Crocker Huffman Land and Water Company to Merced Irrigation District by deed recorded May 31, 1922 in Volume 15, Page 401, Official Records of Merced County, consists of the area that is owned by MID but leased to Merced County for a

2-1

park under an agreement recorded March 18, 1976 in Volume 2024, Page 764 of Official Records of Merced County.

5. Lake Yosemite has an un-gated overflow/spillway located at the east end of Lake Yosemite Dam, immediately north of the Fairfield Canal, in the vicinity of the boat ramp in the park area, which will impact areas of the proposed Project.

6. Cottonwood Creek, a natural drainage channel through the existing campus area, is not maintained by any single agency. The channel as it exists today begins at the south edge of the Le Grand Canal with the storm drainage collected from the area between the Le Grand Canal and Fairfield Canals being intercepted by the Fairfield Canal. The channel continues on the south side of the Fairfield Canal and flows through the existing campus to the southwest crossing Lake Road near Cardella Road then meandering west through both County and City residential areas to its confluence with Fahrens Creek just west of Merced College.

2-1 (cont.)

MID would like to readdress safety and operational issues relating to the UC Campus' location adjacent to existing MID facilities, particularly the Le Grand and Fairfield Canals. Said safety and operational issues were communicated through MID's response to the UC Campus' EIR, correspondence, and various meetings with UC staff and consultants as early as 2000, as well as various follow-up correspondence. MID believes the following mitigation measures are still necessary and required to reduce the risk to life and property resulting from the UC locating its campus directly on top of these major irrigation facilities.

MID respectfully proposes that the following conditions be considered as mitigation for the proposed student housing project:

Fairfield Canal

1. Install a bypass from the Le Grand Canal to the Fairfield Canal to eliminate power plant bypass flows in the Fairfield Canal from Lake Yosemite to the Power Plant when the plant goes off-line. When this happens, water that normally flows down the Le Grand Canal is diverted to the Fairfield Canal which can then fluctuate from 5 CFS to 500 CFS in a short period of time, thereby increasing the dangers to students who may be in or around the Fairfield Canal. This option may also mitigate the ensuing conditions proposed for the Fairfield Canal.
2. Install a concrete liner in the canal or fortify the raised banks of the earthen canal.
3. Make improvement to grade change chute and energy dissipater. An acceptable in-place safety measure at the head and along the chute is still needed to prevent access to the chute.
4. The Fairfield Canal is the only facility that MID will accept storm drainage water from the campus site. If utilized, this will also require UC Merced to amend their existing "Storm Drainage Contract" with the Merced Irrigation District Drainage Improvement District (MIDDID No. 1).
5. Design appropriate sub-drain drainage systems to protect proposed campus development in areas where the Fairfield Canal seeps through the banks of the canal or concrete line these sections of the canal to reduce seepage.

2-2

(209) 722-5761 744 West 20th Street Merced, California 95344-0288
Administration / FAX (209) 722-6421 • Finance / FAX (209) 722-1457 • Water Resources / FAX (209) 726-4176
Energy Resources / FAX (209) 726-7010 • Customer Service (209) 722-3041 / FAX (209) 722-1457

General Comments

1. An MID signature block on any Improvement Plans for U.C. Merced Campus that affect MID facilities will be required.
2. An Encroachment Agreement with MID will be required for work associated with improvements to MID and for any roadways, walkways, bike paths, utilities and pipelines crossing MID facilities.
3. Be advised that the MID does not accept landscape tail water or runoff into its canal system.
4. If any storm water from the storm water basin south of the proposed development is to be discharged into Cottonwood Creek, there are capacity restrictions downstream of the development under current conditions.
5. Issues of health and safety around its facilities shall be coordinated with MID.
6. MID reserves the right for further comment as unforeseen circumstances may arise.

2-3

Thank you for the opportunity to comment on the above referenced document. If you have any questions, please contact me at 722-5761.

Sincerely,

Mike Morris

Mike Morris LS
Survey Project Manager
Merced Irrigation District

(209) 722-5761 744 West 20th Street Merced, California 95344-0288
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Energy Resources / FAX (209) 726-7010 • Customer Service (209) 722-3041 / FAX (209) 722-1457

Letter 2 Response **Mike Morris, Merced Irrigation District (MID)**
January 17, 2023

2-1 The comment lists a number of Merced Irrigation District (MID) facilities, including Fairfield Canal, Le Grand Canal, Lake Yosemite, the Fairfield Power Plant, and an un-gated overflow/spillway on Lake Yosemite Dam, and Cottonwood Creek, a natural drainage channel through the existing campus area that is not maintained by any single agency, and states that the proposed project would affect these facilities. None of the MID facilities referenced above nor Cottonwood Creek are located on or adjacent to the project site; the nearest MID facility or water feature to the site is the Fairfield Canal, located approximately 0.25 miles to the east. Given this distance, the proposed project would not have the potential to directly impact these facilities. However, while runoff from the project site would eventually drain into Cottonwood Creek, and thus indirectly affect this facility, it would first be detained in the drainage basin to the south of the project site and released at an appropriate rate such that no adverse downstream effects such as flooding would occur.

2-2 The comment lists a series of improvements to Le Grand and Fairfield Canals, Fairfield Power Plant, and the Lake Yosemite ungated spillway, and requests that those be considered as mitigation for the proposed project. The analysis in the Draft IS/MND does not identify any significant environmental impacts related to risks to life or property in connection with MID facilities, and thus the improvements suggested by MID as mitigation are not required. The comment is noted for the record.

2-3 The proposed project does not involve improvements to MID facilities, and thus improvement plans would not be prepared, nor would an encroachment permit be required. Furthermore, landscape tail water or runoff from the project site would be directed to an existing drainage basin to the south, and thus would not enter the MID canal system that traverses campus. While runoff from the project site would eventually be discharged in Cottonwood Creek, it would first been detained in the drainage basin to the south of the project site and released at an appropriate rate such that no downstream flooding would occur due to capacity concerns. Finally, as the proposed project would not affect MID facilities, no coordination with MID with respect to issues of health and safety around its facilities is required.

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Appendix G

Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program

Public Resources Code section 21081.6 and section 15097 of the California Environmental Quality Act (CEQA) Guidelines require public agencies to establish monitoring or reporting programs for projects approved by a public agency whenever approval involves the adoption of either a mitigated negative declaration or specified environmental findings related to environmental impact reports.

The following is the Mitigation Monitoring and Reporting Program (MMRP) for the UCM/MCCD "Promise" Intersegmental Student Housing project, which is designed to ensure that the mitigation measures identified in the Initial Study are implemented. The MMRP for the proposed project, as outlined in **Table 1**, *UCM/MCCD "Promise" Intersegmental Student Housing Project Mitigation Monitoring and Reporting Program*, describes monitoring and reporting procedures, monitoring responsibilities, and monitoring schedules for the mitigation measures identified in the Initial Study. All monitoring actions, once completed, will be reported in writing to or by the UC Merced Physical & Environmental Planning, which will maintain mitigation monitoring records for the proposed project. The MMRP will be considered by the University in conjunction with project review and will be included as a condition of project approval.

The components of the MMRP include:

Impact: This column summarizes the impact stated in the Final Initial Study prepared for the proposed project.

Mitigation Measure: All mitigation measures identified in the Final Initial Study are presented and numbered accordingly.

Action(s): For every mitigation measure, one or more actions are described. The actions delineate how the mitigation measures will be implemented, and, in some instances, the criteria for determining whether a measure has been successfully implemented. Where mitigation measures are particularly detailed, the action may refer to the measure.

Implementing Party: This item identifies the entity that will undertake the required action.

Timing: Provides the timing of when the mitigation measure is to be implemented.

Status/Date/Initials: Monitors implementation of the mitigation measure.

TABLE 1
UCM/MCCD "PROMISE" INTERSEGMENTAL STUDENT HOUSING PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Status/Date/ Initials
Air Quality					
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?	**MM AQ-1a:** The construction contractor for the proposed project shall be required via contract specifications to use construction equipment rated by the USEPA as meeting Tier 4 (model year 2008 or newer) emission limits for engines between 50 and 750 horsepower.	Include this requirement in the construction contract for the proposed project.	UC Merced Physical & Environmental Planning	Prior to and throughout project construction.	
	MM AQ-1b: The construction contract for the proposed project shall include all measures specified in SJVAPCD Regulation VIII (as amended) to reduce fugitive dust impacts, including but not limited to the following: • All disturbed areas, including storage piles, which are not being actively utilized for construction purpose, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover. • All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions 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.	Include this requirement in the construction contract for the proposed project. Inspect construction site at regular intervals during construction to verify compliance with specified measures.	Construction contractor and UC Merced Physical & Environmental Planning	During construction	

TABLE 1
UCM/MCCD "PROMISE" INTERSEGMENTAL STUDENT HOUSING PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Status/Date/ Initials
Biological Resources					
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?	**MM BIO-1:** The proposed project shall incorporate bird-safe design practices (for example, American Bird Conservancy's Bird- Friendly Building Design [2015] or San Francisco Planning Department's Standards for Bird-Safe Buildings [2011]). The UC Merced Physical and Environmental Planning Department shall review the final designs of the proposed building to determine that appropriate bird safety designs have been effectively incorporated to reduce potential impacts to birds. The following design strategies shall be considered in the design of the proposed building: • Create building facades with "visual noise" via cladding or other design features that make it easier for birds to identify the building and not mistake windows for open sky ortrees. • Incorporate windows that are not clear or reflective into the building. • 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.	Review final building and structure design plans for appropriate bird safety designs. Revise design, if necessary, to ensure compatibility with bird-safe design practices.	UC Merced Physical & Environmental Planning	Prior to finalizing project design	

TABLE 1
UCM/MCCD "PROMISE" INTERSEGMENTAL STUDENT HOUSING PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Status/Date/ Initials
Cultural Resources					
Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	**MM CUL-1:** 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 project site, 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 University.	Include this requirement in the construction contract for the proposed project.	Construction contractor and UC Merced Physical & Environmental Planning	During construction	
Disturb any human remains, including those interred outside of dedicated cemeteries?	**MM CUL-2:** If human remains of Native American origin are discovered during ground disturbing activities, the MCCD and the University 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 48 hours after being notified by the Commission.	Include this requirement in the construction contract for the proposed project.	Construction contractor and UC Merced Physical & Environmental Planning	During construction	

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MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

Impact	Mitigation Measure	Action(s)	Implementing Party	Timing	Status/Date/ Initials
Geology and Soils					
Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking?	**MM GEO-1:** 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 the 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.	Retain certified engineering geologist or licensed geotechnical engineer to conduct site-specific geotechnical investigation. Implement geotechnical recommendations.	UC Merced Physical & Environmental Planning	During project design, prior to start of excavation, and during construction.	
Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	**MM GEO-2:** 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.	Include this requirement in the construction contract for the proposed project.	Construction contractor and UC Merced Physical & Environmental Planning	During construction	
Noise					
[Generate 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?	**MM NOI-1:** UC Merced shall develop and implement a construction noise mitigation program for the proposed project that includes but is not limited to the following: • Construction activities shall be restricted to the hours of 7:00 a.m. and 6:00 p.m. 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.	Develop construction noise mitigation program and include in construction contract specifications. Inspect construction site to verify that measures are being implemented.	Construction contractor and UC Merced Physical & Environmental Planning	Prior to and during construction	

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	• 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. • 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 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 construction activities, such as 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 project construction.				
[Generate] excessive groundborne vibration or groundborne noise levels?	**MM NOI-2:** Drilled piles will be used where geological conditions permit their use. For any impact pile driving activities occurring within 100 feet of student housing, limit impact-pile driving activities to daytime hours to avoid sleep disturbance at residential housing. 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.	Develop construction vibration mitigation program and include in construction contract specifications. Inspect construction site to verify that measures are being implemented.	Construction contractor and UC Merced Physical & Environmental Planning	Prior to and during construction	