ADDENDUM NO.2
TO THE
2020 LONG RANGE DEVELOPMENT PLAN
SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

FIELD EDUCATION CENTER / FIELD RESEARCH STATION

UNIVERSITY OF CALIFORNIA MERCED, MERCED COUNTY, CALIFORNIA

Submitted to:

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1.0 PROJECT INFORMATION

Project Title:	Field Education Center / Field Research Station
Project Location:	University of California, Merced, Merced County
Lead Agency's Name and Address:	The Regents of the University of California 1111 Franklin Street Oakland, CA 94607
Contact Person:	Phillip Woods, AICP Campus Architect and Director of Physical & Environmental Planning 209.349.2561
Project Sponsor's name and address:	University of California, Merced Campus 5200 North Lake Road Merced, California 95343
Previously Certified 2020 LRDP Programmatic SEIR; 2009 LRDP EIS/EIR; and Supplemental Transportation Impact Analysis:	This Addendum documents that none of the conditions described in Section 15162 of the California Environmental Quality Act (CEQA) Guidelines have occurred, and the proposed project will not result in new or more severe significant effects that were not already evaluated and disclosed in the Subsequent Environmental Impact Report (SEIR) for the University of California, Merced (UC Merced) 2020 Long Range Development Plan (2020 LRDP) (State Clearinghouse No. 2018041010); the 2009 UC Merced and University Community Project Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) (State Clearinghouse No. 2008041009) (2009 LRDP EIS/EIR); and the supplemental 2020 LRDP transportation impact analysis included in the Medical Education Building Project EIR (State Clearinghouse No. 2021040047). 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 2020 LRDP and its SEIR, the 2009 LRDP EIS/EIR, and the supplemental LRDP transportation impact analysis in the Medical Education Building Project EIR are incorporated by reference and are available for review at the following locations: • UC Merced Physical Operations, Planning and Development at 5200 North Lake Road on the UC Merced campus • Kolligian Library at 5200 North Lake Road on the UC Merced Campus • UC Merced Downtown Campus Center at 655 W 18th Street in Merced, California • Online at: https://planning.ucmerced.edu/2020LRDP

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2.0 INTRODUCTION

2.1 PURPOSE OF THIS ADDENDUM

After certification of the Subsequent Environmental Impact Report (SEIR) [1] and adoption of the Long Range Development Plan (LRDP) [2] for the University of California, Merced (UC Merced) campus in 2020, the University has proposed the construction of the Field Education Center/Field Research Station (the "project") on the UC Merced campus. The project would be completed in multiple stages based on available funding. The first stage of the project would consist of the construction of a small field education pavilion structure with restrooms, limited storage, and parking. Under later stages of project development, the facilities would be expanded to provide a complete field research station.

As the project would be undertaken by the University of California (UC or University), as the lead agency, the University must evaluate the potential environmental impacts of the project in compliance with the California Environmental Quality Act (CEQA). The University has completed an evaluation of the project pursuant to Section 15168(c)(2) of the State CEQA Guidelines to determine if the project is within the scope of UC Merced's 2020 LRDP Program SEIR that was certified by the University in March 2020 and the 2009 UC Merced and University Community Project Environmental Impact Statement (EIS) and Environmental Impact Report (EIR)[3] (2009 LRDP EIS/EIR) that was certified in 2009. The State CEQA Guidelines specify that if the lead agency can find that, pursuant to Section 15162, no new or more severe significant impacts could occur and no new mitigation measures are required, then the project is within the scope of the previous program EIR, and no further evaluation is required.

As discussed in Section 1.5.2 of the 2020 LRDP SEIR, the SEIR includes an evaluation of the environmental impacts that would occur with the construction and operation of small-scale development projects proposed on the campus under the 2020 LRDP. Section 1.5.2 of the 2020 LRDP SEIR states that small-scale projects would include, but not be limited to, small solar and alternative energy projects, educational and research projects (such as the Field Education Center/Field Research Station), and small ancillary buildings and structures and their associated infrastructure (i.e., utilities and roads). The small-scale development projects would be less than 10,000 square feet of building space or less than 2 acres of ground disturbance and proposed on the campus lands within three specific land use designations: Campus Mixed Use (CMU), Campus Building Reserve and Support Land (CBRSL), or Research Open Space (ROS). The proposed Field Education Center/Field Research Station would include less than 10,000 square feet of new building space and would be located within an area of the campus designated ROS, which is consistent with the definition of small-scale projects evaluated in the 2020 LRDP SEIR. Although the project would be located on lands identified in the 2020 LRDP for this use, the proposed project would support an increase in research and educational activities on the adjacent Merced Vernal Pool and Grassland

1 University of California, Merced. 2020. *UC Merced 2020 Long-Range Development Plan Final Subsequent Environmental Impact Report*, March 2020.
2 University of California, Merced. 2020. *UC Merced 2020 Long-Range Development Plan*, March 2020.
3 University of California, Merced. 2009. *UC Merced and University Community Project Environmental Impact Statement/Environmental Impact Report*. March 2009.

Reserve (MVPGR or Reserve). The purpose of this Addendum is to describe the proposed project and analyze whether the construction and operation of the Field Education Center/Field Research Station, including the increased research and educational use of the MVPGR and campus lands that would be facilitated by this project, would have the potential to result in new significant impacts that were previously not disclosed.

2.1.1 2020 Long Range Development Plan Subsequent Environmental Impact Report

In 2009, the University certified the UC Merced and University Community Project joint 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 that would occur with development of an 815-acre campus site with facilities to serve an enrollment projection of 25,000 students by 2030. In 2020, UC Merced prepared an updated LRDP that encompassed a larger 1,026-acre campus site and a lower enrollment level and prepared a SEIR that analyzed and disclosed the environmental impacts that would occur with development of the 1,026-acre campus site with facilities to serve an enrollment projection of 15,000 students 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, as well as the likely environmental impacts of small-scale development projects proposed on the campus. The 2020 LRDP SEIR (Volume 1) analyzes 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. Following the certification of the 2020 LRDP SEIR in 2020, the University prepared and circulated an updated supplemental program-level transportation impact analysis of campus growth through 2030 under the 2020 LRDP based on current vehicle miles traveled (VMT) metrics consistent with State CEQA Guidelines Section 15064.3, subdivision (b). The program-level VMT analysis was published in the UC Merced Medical Education Building Project Draft EIR in August 2022[4], and the Final EIR, including the supplemental VMT transportation impact analysis, was certified by the University on November 17, 2022.[5] The updated LRDP transportation impact analysis in the UC Merced Medical Education Building Project EIR replaces in full the prior level of service (LOS)-based LRDP transportation impact analysis that was included in the 2020 LRDP SEIR.

Both the 2020 LRDP SEIR (as supplemented in 2022 by the VMT transportation impact analysis) and the 2009 LRDP EIS/EIR (specific sections only along with related addenda) serve as Tier 1 program documents that the Campus can use in its environmental review of subsequent projects, such as the

[4] University of California, Merced. 2022b. UC Merced Medical Education Building Draft Environmental Impact Report. August.

[5] University of California, Merced. 2022c. UC Merced Medical Education Building Final Environmental Impact Report. November.

Field Education Center/Field Research Station, under the tiering provisions of CEQA. Thus, this document is an addendum to the 2020 LRDP SEIR.

The Field Education Center/Field Research Station is consistent with the land uses and intensities of development identified in the 2020 LRDP and the project is within the scope of activities covered in the environmental impact evaluation in the 2020 LRDP SEIR and the 2009 LRDP EIS/EIR. However, because this project would have the potential to result in an increase in research and educational activities on the campus lands and the adjacent MVPGR, this Addendum to the SEIR has been prepared, pursuant to Section 15168(c) of the State CEQA Guidelines, which states, "subsequent activities in the program must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared." Pursuant to Section 15168(c)(4), an agency should use "…a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were covered in the program EIR." This Addendum uses a checklist based on Appendix G of the State CEQA Guidelines to evaluate whether the project's environmental impacts are adequately addressed in the previous analysis.

2.1.2 CEQA Guidelines Regarding an Addendum

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

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

- Substantial changes are proposed in the project that will require major revisions of the previous EIR or MND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

- Substantial changes occur with respect to the circumstances under which the project is undertaken that will require major revisions of the previous EIR or MND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR or MND was certified as complete was adopted, shows any of the following:

    - The project will have one or more significant effects not discussed in the previous EIR or MND;

- Significant effects previously examined will be substantially more severe than shown in the previous EIR or MND;

- Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

- Mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR or MND would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

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

Changes to the approved 2020 LRDP in connection with the project and any altered conditions since certification of the EIR in March 2020 would:

- Not result in any new significant environmental effects, and

- Not substantially increase the severity of previously identified significant effects.

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

- The project would have new significant effects,

- The project would have substantially more severe effects,

- Mitigation measures or alternatives previously found to be infeasible would in fact be feasible, or

- Mitigation measures or alternatives that are considerably different from those analyzed in the EIR would substantially reduce one or more significant effects on the environment.

As described in **Section 4.0**, Coverage Under the 2020 LRDP, and **Section 5.0**, Consistency with the 2020 LRDP SEIR and 2009 LRDP EIS/EIR, none of the conditions described above calling for preparation of a subsequent document have occurred. Therefore, the differences between the small-scale development projects included in the certified SEIR, and the proposed project currently considered constitute changes consistent with State CEQA Guidelines Section 15164 that may be addressed in an addendum to the SEIR.

2.2 ORGANIZATION OF THE ADDENDUM

This Addendum is organized into the following sections:

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

Section 2.0 – Introduction: summarizes the purpose of the Addendum, the 2020 LRDP SEIR and 2009 LRDP EIS/EIR, and this document's organization.

Section 3.0 – Project Description: includes a description of the project, including the elements that have triggered the preparation of this Addendum.

Section 4.0 – Coverage under the 2020 LRDP: describes the consistency of the project with the 2020 LRDP.

Section 5.0 – Consistency with the 2020 LRDP SEIR and 2009 LRDP EIS/EIR: analyzes the potential effects on the existing physical environment from implementation of the proposed project, as compared to the impacts of small-scale development projects analyzed in the 2020 LRDP SEIR and the development analyzed in the 2009 LRDP EIS/EIR, based on an environmental checklist for each resource topic. This analysis has been prepared to determine whether any of the conditions described above that would require preparation of a subsequent or supplemental EIR would occur as a result of the project.

Section 6.0 – Applicable 2020 LRDP SEIR Mitigation Measures: includes mitigation measures from the 2020 LRDP SEIR that are applicable to the project.

Section 7.0 – List of Preparers: lists individuals, consultants, and agencies involved in the preparation of this document.

Section 8.0 – References: lists references used in the preparation of this document.

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3.0 PROJECT DESCRIPTION

3.1 REGIONAL SETTING AND CONTEXT

3.1.1 Regional Setting

The 1,026-acre UC Merced campus is located on Lake Road, near its intersection with Bellevue Road, in Merced County in the San Joaquin Valley. The campus is located approximately 2 miles northeast of the limits of the City of Merced (**Figure 1**). State Route 99 provides regional access to the campus. The campus is bordered primarily by grasslands and grazing land, with some low density rural residential land use to the west. To the south it is bordered by agricultural lands planned for future development. Campus views across the expansive open space provide visual links to the area's agricultural heritage and the Sierra Nevada Mountain Range in the distance.

The campus is situated southeast of the Lake Yosemite Regional Park, which includes a water reservoir owned and operated by the Merced Irrigation District (MID). Lake Yosemite Regional Park is managed by Merced County under an agreement with MID. Water is conveyed from the lake to agricultural areas south of the campus via two 50-foot-wide canals, the Le Grand and Fairfield canals, both owned and operated by MID. The two canals transect the campus, generally following the topography of the land.

The land immediately south of the campus is owned by the Virginia Smith Trust (VST) and is currently planted in almond trees. This land has been planned for development since the County's adoption of the University Community Plan (UCP). The UCP contemplates a commercial and residential mixed-use development, with substantial open space. The UCP is currently undergoing an update, and VST is preparing a Specific Plan in accordance with the updated UCP for development of the first phase of the UCP and annexation into the City of Merced.

With the exception of some rural residences immediately adjacent to Bellevue Road, the lands to the west of the campus along Bellevue Road are undeveloped. However, a number of residential and mixed-use projects are proposed for these lands.

The University owns the adjoining approximately 6,560-acre MVPGR to the east and northeast of the campus. The MVPGR comprises the 5,030-acre VST Preserve, the 1,339-acre Campus Natural Reserve, and the 97-acre Myers Easterly property (**Figure 1**). The MVPGR lands were designated as environmental mitigation lands associated with the development of the campus and are protected from development in perpetuity. There are currently two conservation easements on the property[6] covering approximately 5,125 acres. The University is working with the California Department of Fish and Wildlife (CDFW) to transfer the two existing easements to CDFW and then place a single conservation easement on the entirety of the MVPGR, to be held by CDFW. The easement will protect the land in perpetuity from development and permit the limited allowable use of the property for research and educational activities that are harmonious with the protection and preservation of the conservation values of the MVPGR. The MVPGR contains one of the highest concentrations of vernal pools in the Central Valley and protects hundreds of ephemeral pool and

[6] Virginia Smith Trust and Myers Easterly properties

swale wetlands which provide wetland habitat for migratory waterfowl and wading birds, and are home to many rare, endemic, and endangered species. Seasonal cattle grazing helps maintain the viability of the vernal pools by controlling the spread of non-native plant species.

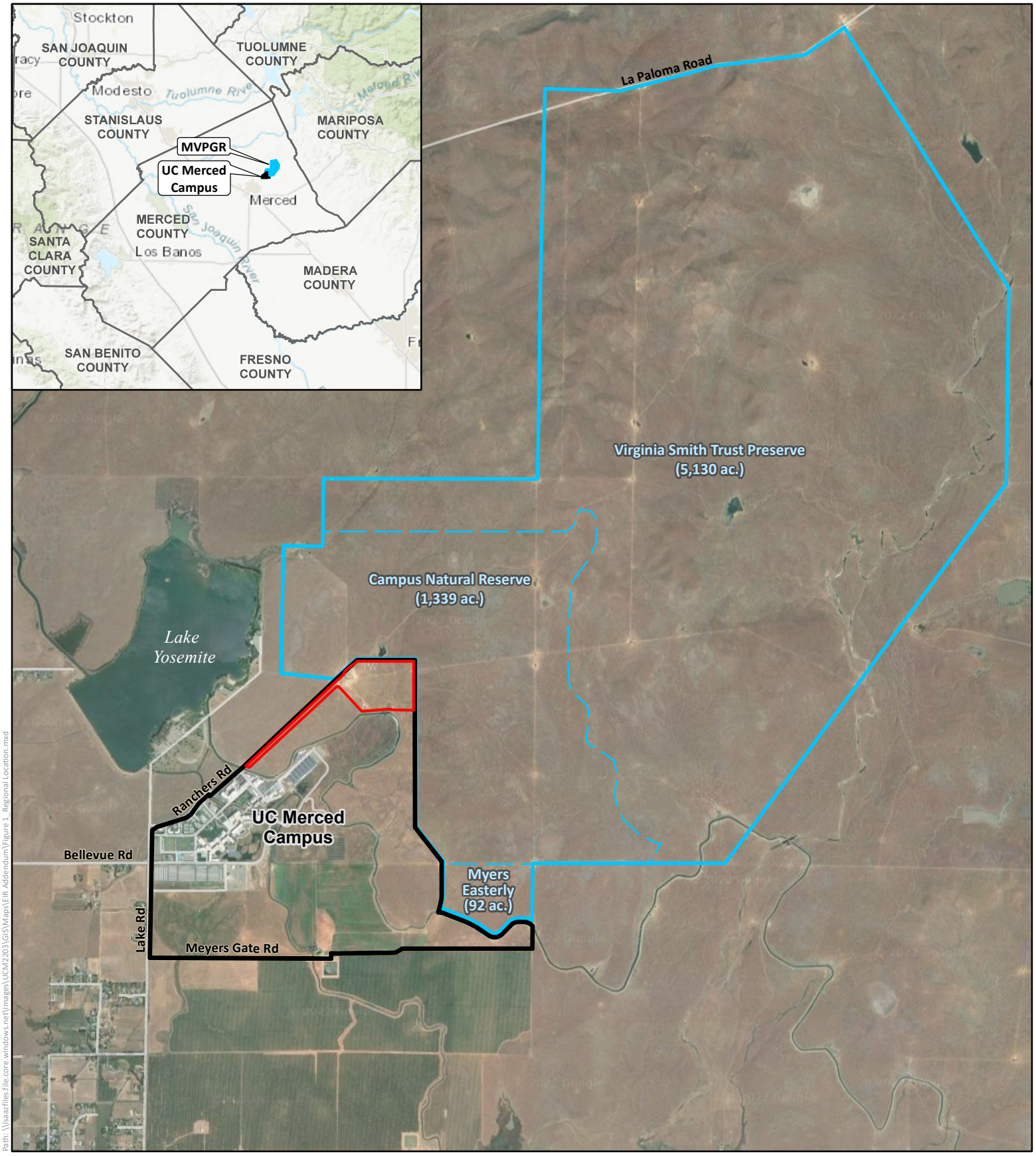
3.1.2 Project Location and Existing Conditions

The Field Education Center/Field Research Station project site is approximately 10 acres in size and is located in the northernmost portion of the UC Merced campus, adjacent to the MVPGR (**Figure 2**). The overall project area also includes approximately 70 acres to the south and east that would accommodate ancillary project components, including access improvements (16-acre area) and vernal pool reconstruction (53-acre area), respectively. Thus, the overall project area is approximately 80 acres.

The overall project area is undeveloped at this time. The Field Education Center/Field Research Station project site previously supported a barn that was removed in 2019 following a storm in 2017 that caused the structure to collapse. The barn footprint consists of compacted barn floor soil mixed with fill, and the area is ruderal. The former barn footprint is surrounded by a network of steel and timber corral fences. A water supply well is also located within the Field Education Center/Field Research Station project site and serves as a secondary source of water since the primary water source is not sufficient to meet fire flow requirements. To accommodate fire flow requirements, a 25,000-gallon water storage tank was constructed near the on-site well. The Field Education Center/Field Research Station project site also includes five storage containers, including one large storage container east of the barn footprint that is used for grazing equipment, two 40-foot containers in the corral complex that store materials salvaged from the old barn, and two 20-foot containers in the corral complex used for research support equipment. The remainder of this 10-acre site consists primarily of annual grasslands. The site is devoid of trees except for one mature eucalyptus tree in the southwestern portion of the site. An access gate to the MVPGR lands is located along the northwestern boundary of the project site. The steel gate remains locked unless authorized personnel are scheduled to access the MVPGR lands.

The approximately 53-acre vernal pool reconstruction area to the east of the Field Education Center/Field Research Station project area, as shown in **Figure 2**, is also currently undeveloped and is characterized by annual grasslands with remnant vernal pools and swales. An approximately 1.5-acre experimental research lizard enclosure is located in this area along the northern campus boundary, and two 10- to 15-foot-wide dirt roads bisect the area from west to east/southeast. Cattle grazing infrastructure, including fencing, gates and a water trough, is also located in this area, as reflected in **Figure 2**.

The overall project area is relatively flat with elevations ranging between approximately 275 and 285 feet above mean seal level. As reflected in **Figure 3**, the current 2020 LRDP land use designation of the lands within the Field Education Center/Field Research Station project site is Research Open Space (ROS), which is a designation given to land that is intended for active or manipulative field research and experimentation associated with the unique physiographic characteristics of the area (e.g., the vernal pool-swale wetland features present on the land). The vernal pool reconstruction area is designated as Campus Building Reserve & Support Land (CBRSL) and Passive Open Space (POS).



Path: \\sa.azfiles.file.core.windows.net\Images\UCM2203\GIS\Maps\EIR Addendum\Figure1_Regional Location.mxd

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LEGEND

- UC Merced Campus
- Field Education Center / Field Research Station
- Merced Vernal Pool and Grassland Reserve (MVPGR)
- MVPGR Easement Boundary

FIGURE 1

Regional Location

Basemap Source: Google Maps Imagery (2021).

Date: 1/9/2023

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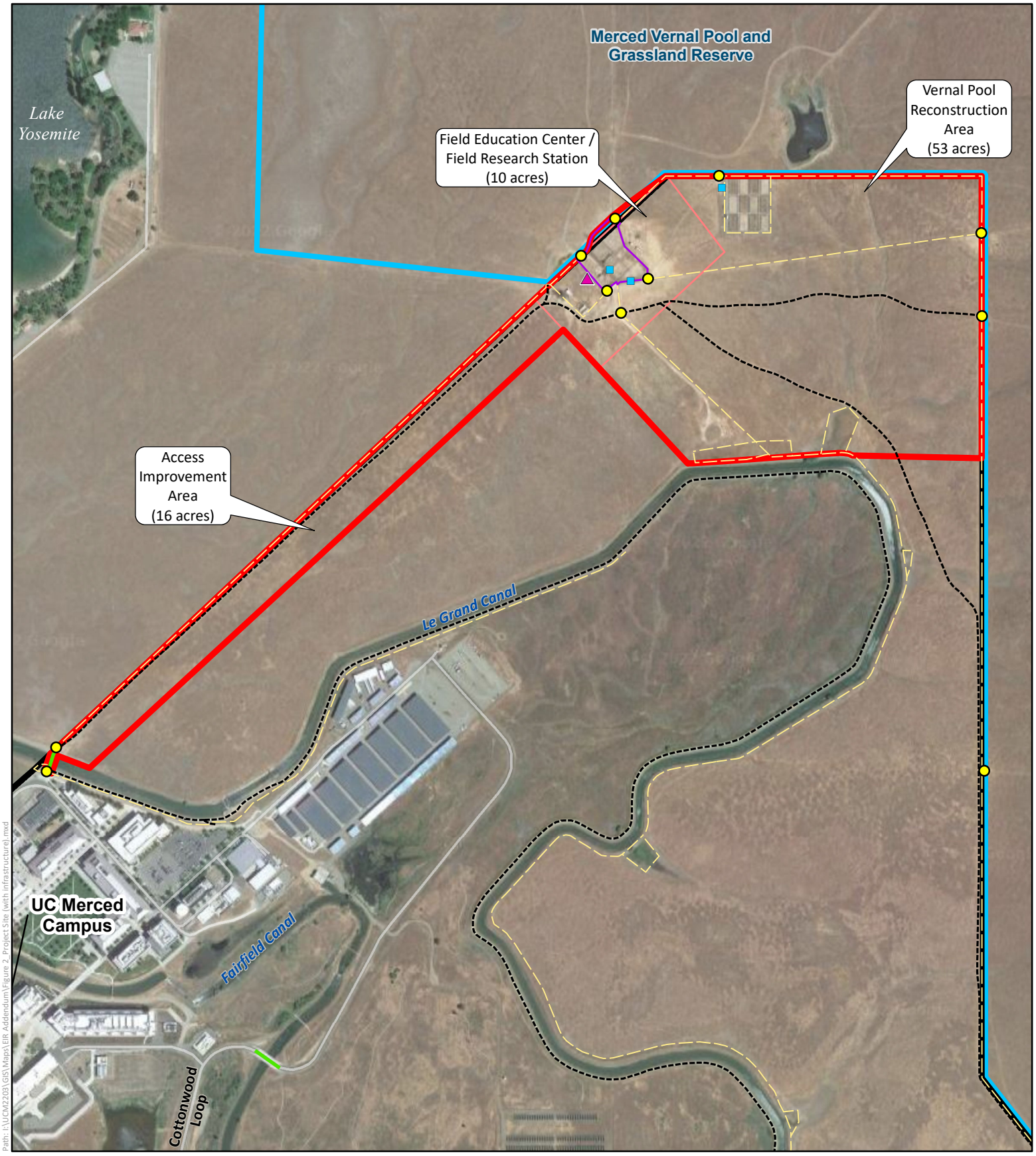

Path: I:\UCM2203\GIS\Maps\EIR Addendum\Figure 2_Project Site (with infrastructure).mxd

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Basemap Source: Esri World Imagery (2021)

LEGEND

- UC Merced Campus
- Field Education Center / Field Research Station
- Proposed Use Areas
- Merced Vernal Pool and Grassland Reserve (MVPGR)
- Corral (may be relocated)
- Unpaved Road
- Bridge
- Fence
- Gate
- Pond
- Trough
- Water Well

FIGURE 2

Project Site

Date: 1/12/2023

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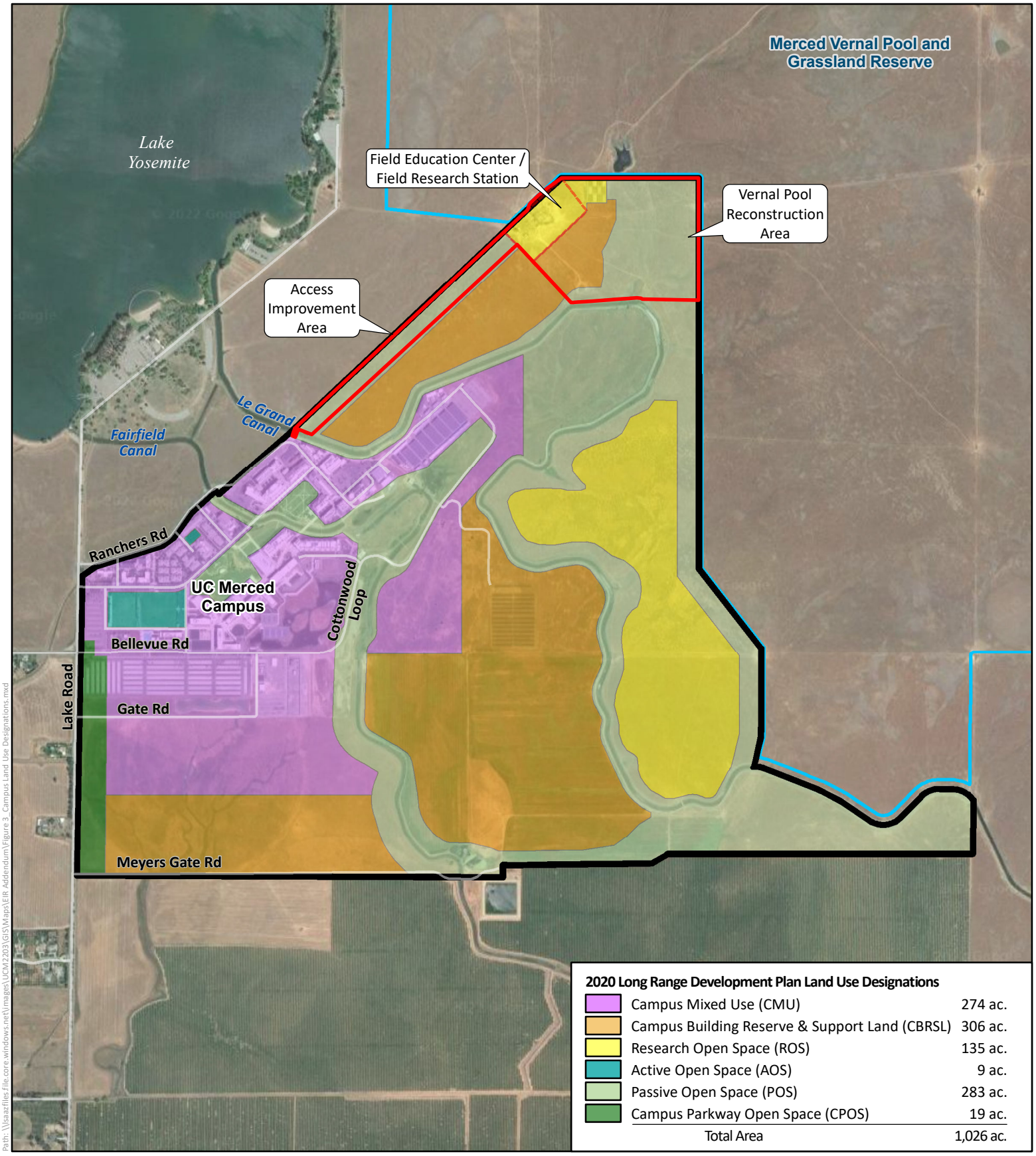

Path: \\sacfiles.file.core.windows.net\Images\UCM2203\GIS\Maps\EIR Addendum\Figure 3_Campus Land Use Designations.mxd

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Basemap Source: Esri World Imagery (2021)

LEGEND

- UC Merced Campus
- Field Education Center / Field Research Station
- Proposed Use Area
- Merced Vernal Pool and Grassland Reserve (MVPGR)

FIGURE 3

Campus Land Use Designations

Date: 1/9/2023

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3.1.3 Bridge and Access Road

The project area is located about 0.6 miles northeast of the developed portion of the campus and is accessed via Ranchers Road. Ranchers Road currently ends at a double-wide cattle gate and a 60-foot-long by 20-foot-wide bridge over Le Grand Canal. Beyond the bridge, there is a 15-foot-wide unpaved road that runs parallel to the campus' northwestern fence line and provides access to the Field Education Center/Field Research Station project site and the vernal pool reconstruction project area and the MVPGR (**Figure 2**). As shown in **Figure 3**, the access improvement area is designated POS in the 2020 LRDP.

3.2 PROJECT OBJECTIVES

The proposed Field Education Center/Field Research Station is an important project that is intended to facilitate the MVPGR's educational and research program by providing a facility that supports field research and educational programming, including increases in the levels of K-12 and public outreach. The UC Merced campus is committed to sustainability and environmentally friendly green design, and will require the Field Education Center/Field Research Station, at a minimum, to use innovative off-grid technologies and green, sustainable materials, to achieve Leadership in Energy and Environmental Design (LEED) GOLD certification, if applicable, and meet campus building energy performance benchmarks.

The primary objectives of the proposed project are to:

- Create opportunities for students of all ages to appreciate, understand, and engage with nature;
- Inspire and empower next generations of leaders through environmental stewardship;
- Highlight and support UC Merced environmental research; and
- Continue to protect the MVPGR by expanding education and research opportunities in the area adjacent to the MVPGR.

3.3 PROJECT ELEMENTS

The proposed project would be completed in multiple stages based on available funding. The first stage of the project would include development of a Field Education Center, an entry garden and gathering area, an outpost with viewing instruments, internal circulation and parking for motorized and non-motorized transportation, infrastructure to support the uses on-site, and bridge and access road improvements.

Later stages of the project would involve construction of additional meeting and event spaces and other facilities to complete the Field Research Station and reconstruction of between approximately 1 and 2 acres of vernal pools to the east of the Field Research Station site within the campus lands. Trail connections to adjacent areas of the campus may also be created in association with the Field Research Station.

None of the proposed project improvements would be located on the MVPGR. Proposed development on the Field Education Center/Field Research Station project site would maintain a minimum 50-foot setback from the MVPGR property. The proposed use areas are shown in **Figure 4** and are further described below.

3.3.1 Field Education Center

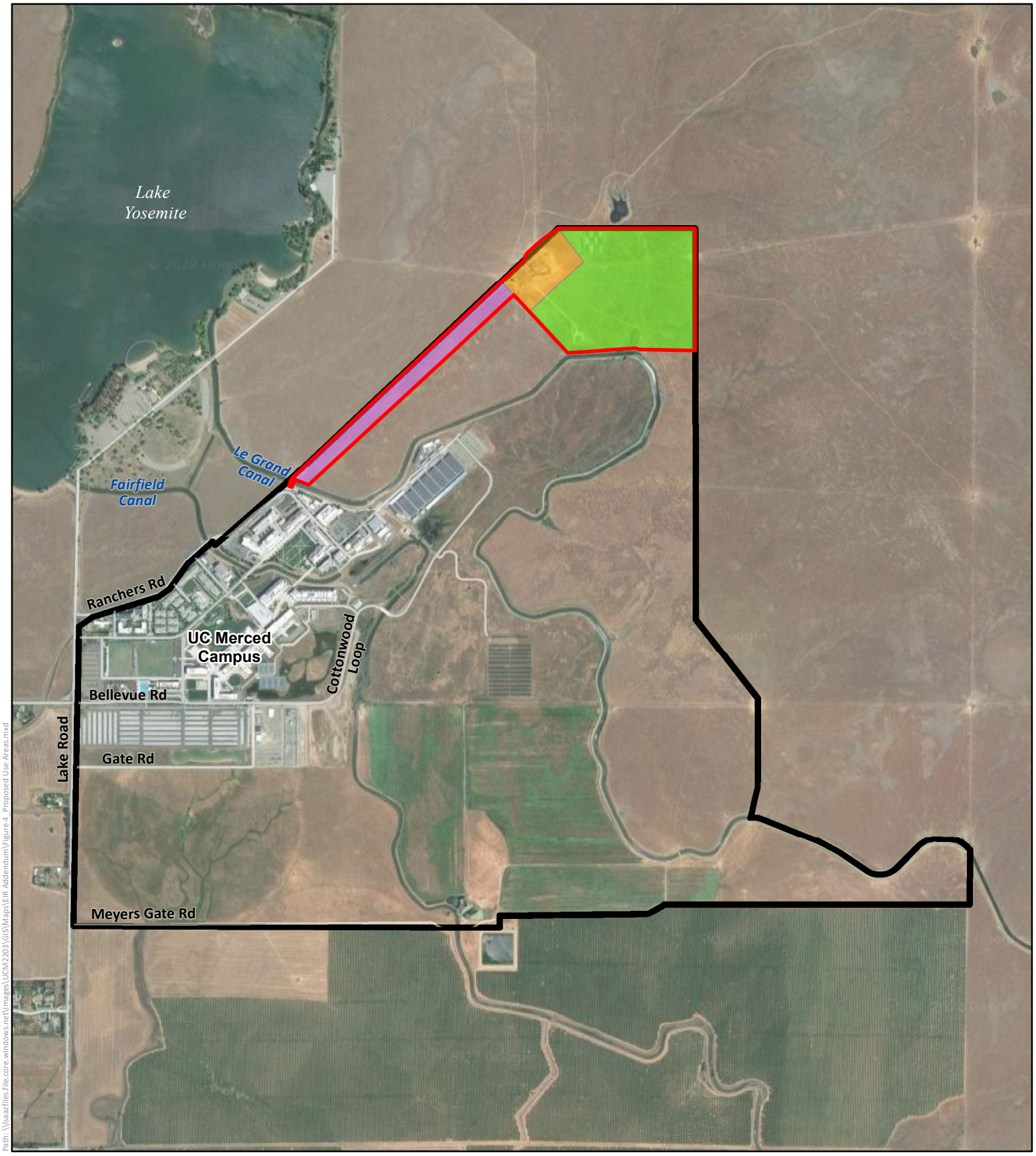
The initial stage of project development would include construction of a 2,500-square foot, open-air pavilion that would offer educational and research opportunities to university and K-12 students (**Figure 5a**). The proposed pavilion would house bench seating, teaching stations, learning displays, and exhibits. The proposed maximum capacity of the pavilion would be 100 people. A small outpost structure would also be constructed in the northern portion of the 10-acre site as part of the initial stage development. A separate 700-square foot restroom and storage facility would be developed during the initial stage of project construction. The Field Education Center structure would not include facilities for overnight stay by researchers.

3.3.2 Field Research Station

Under later stages of project development, an additional 7,000 square feet of building space would be constructed next to and as an add-on to the Field Education Center to house a Field Research Station (**Figure 5b**). Future development would enlarge the structure to provide expanded enclosed meeting and event spaces, lab facilities, and a kitchen, as well as include a potential rustic, minimalist dry camping area for students to learn about leave-no-trace dry camping and for visiting researchers to use sparingly. Additional storage and restroom facilities would also be constructed. The proposed maximum capacity of the Field Research Station would be 175 people.

3.3.3 Vernal Pool Reconstruction

Under later stages of development, between 1 and 2 acres of vernal pools would be constructed within an approximately 53-acre area (**Figures 2 and 4**) to the east or southeast of the proposed Field Education Center/Field Research Station to enhance the existing vernal pool grassland area and provide additional opportunities for education and research that do not involve accessing the MVPGR. The location(s) of constructed vernal pools and any additional trail access routes would be sited to avoid sensitive biological resources, including other extant vernal pools and swales, and would be selected based on the greatest potential for success (e.g., soil type, presence of an intact hardpan soil layer, topography). The constructed vernal pools would be carefully contoured using equipment that may include, but would not be limited to, a small bulldozer, mini excavator, box scraper, and/or skid steer to establish shallow basins and mound topography similar to existing vernal pool areas within the campus lands. The constructed vernal pools would be expected to naturally colonize with native vernal pool vegetation and fauna as a result of inflows from connections to existing pools. The colonization process of the constructed pools may be accelerated through the application of topsoil inoculants and seeding, subject to required regulatory agency approvals. Native vernal pool seed mix, grown from local stock, may also be added to the pools, as needed.



Path: \\sa.azfiles.file.core.windows.net\Images\UCM2203\GIS\Maps\EIR Addendum\Figure 4_Proposed Use Areas.mxd

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Basemap Source: Esri World Imagery (2021)

LEGEND

- UC Merced Campus
- Field Education Center / Field Research Station

Field Education Center / Field Research Station Project Areas

- Field Education Center / Field Research Station (10 ac.)
- Access Improvement Area (16 ac.)
- Vernal Pool Reconstruction Area (53 ac.)

FIGURE 4

Proposed Use Areas

Date: 1/9/2023

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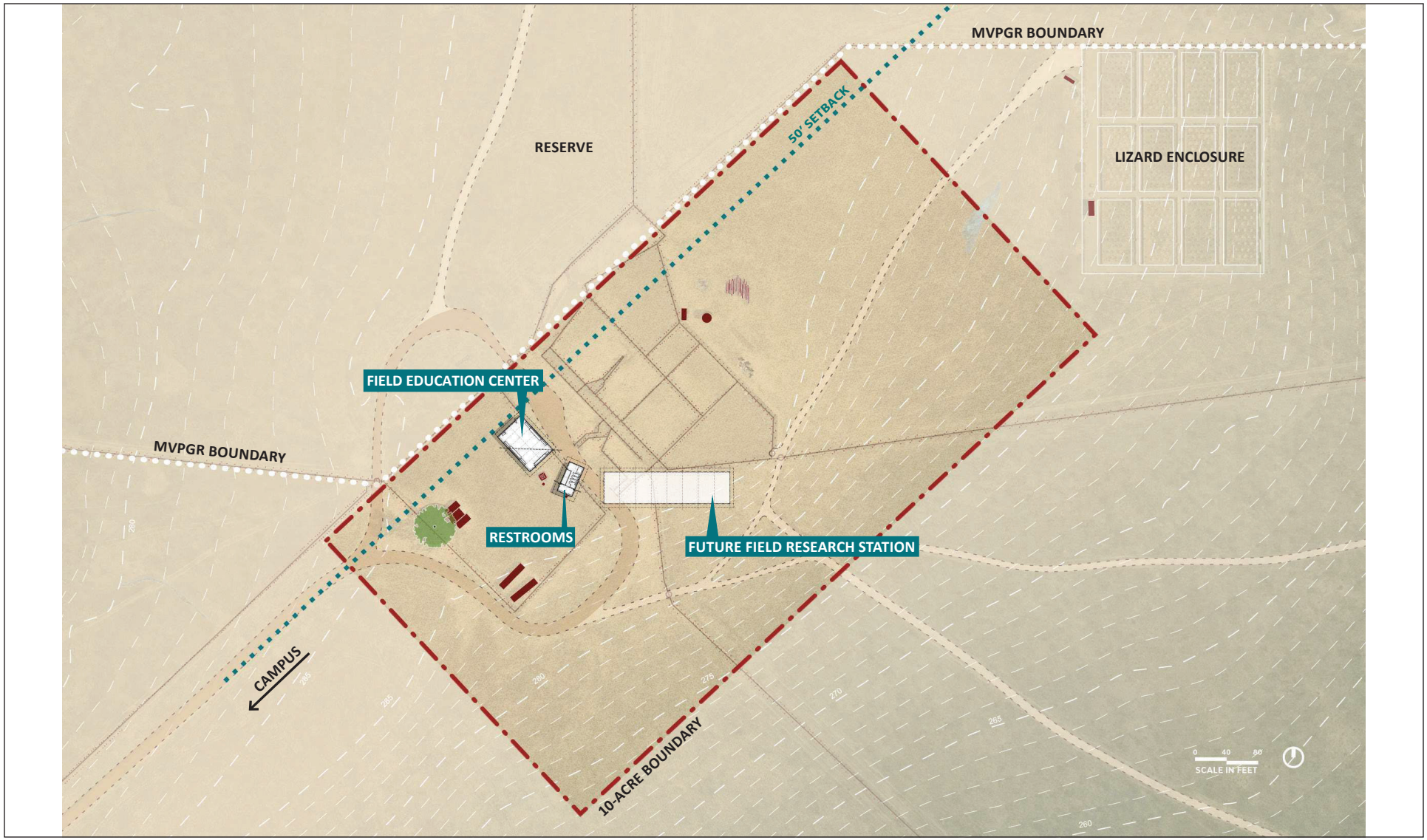

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FIGURE 5a

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SOURCE: UC Merced MVPGR, August 25, 2022

Conceptual Design - Building Layout

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UNIVERSITY OF CALIFORNIA
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FIGURE 5b

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SOURCE: UC Merced MVPGR, August 25, 2022

Conceptual Design - Site Plan

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3.4 INFRASTRUCTURE AND UTILITIES

The proposed project would be developed with a net zero design to minimize the impact of project operations on the environment.

3.4.1 Water

Water for drinking, as well as fire suppression, would be provided by the existing on-site well. A new 200-gallon water tank would be used to store well water. Well water would be supplemented by capturing and storing rainwater in a tank/surface pond and using it for on-site irrigation, fire suppression, and recharge. To minimize the use of groundwater, grey water (water from sinks) generated on site would be captured and used for toilet flushing.

3.4.2 Wastewater

Visitor use of the Field Education Center/Field Research Station would result in the generation of wastewater. As stated above, grey water would be reused. Wastewater would be treated in a composting toilet system that would be installed on site.

3.4.3 Electricity

The project would operate off the electrical grid. All the needed electricity would be generated on site. A wind turbine and roof-top arrays of photovoltaic panels would be installed as part of the project along with battery storage.

3.4.4 Stormwater

As stated above, stormwater runoff from the rooftops and paved areas of the site would be captured and stored in an on-site tank or a surface pond and used for irrigation, fire suppression, and recharge.

3.5 ACCESS AND CIRCULATION

3.5.1 Bridge and Access Road Improvements

The existing dirt road that provides access to the Field Education Center/Field Research Station project site would be improved to a 20-foot-wide gravel road and the existing Rancher's Road bridge over Le Grand Canal would be strengthened and improved to meet the code requirements for buses and fire safety requirements. In addition, bridge improvements to safely accommodate pedestrians may be implemented (e.g., handrail installation, pedestrian lane inclusion, etc.).

3.5.2 Internal Circulation and Parking

The existing access road currently terminates at the old barn site. The terminus of the road at the project site would be modified into a 20-foot-wide loop road that would allow automobiles, buses, and emergency vehicles to approach the facility and park in the parking spaces located across from the Field Education Center/Field Research Station building. Two bus parking spaces, one van, one accessible, and eight standard parking spaces would be provided in conjunction with the Field Education Center, with land set aside to add the same number of spaces as part of the Field Research Station as needed.

3.5.3 Trail Access

The existing campus trail network connects the project site to the built campus and the undeveloped campus lands. A number of dirt access roads currently commence in the area of the old barn and extend out into the campus lands and into the MVPGR, as shown in **Figure 2**. Later stages of the project may include trail connections to adjacent areas of the campus in association with the Field Research Station. No trail connections to the MVPGR would be implemented as part of the project.

3.6 PROJECT CONSTRUCTION

Construction of the Field Education Center facilities would commence in early 2024 and would be completed in about 6 months. Construction of the Field Research Station facilities is not scheduled at this time but is expected to occur between 2025 and 2030 and would also take about 6 to 8 months to be completed. Prior to commencement of construction on the project site, in compliance with the Biological Opinion issued by the U.S. Fish and Wildlife Service (USFWS) and with the Incidental Take Permit (ITP) issued by CDFW to UC Merced for the protection of listed species, including the California tiger salamander, an exclusion fence would be installed to encompass all the areas that would be disturbed by project construction. Protective fencing would also be installed around the eucalyptus tree. Existing fences associated with the cattle corrals would be removed, and the areas where the new facilities would be constructed would be cleared and graded. On-site roads would be constructed. The buildings would then be erected, and berms and mounds would be constructed adjacent to the south side of the Field Education Center/Field Research Station building, the restroom building, and the parking area in order to screen the view of the new facilities from the south.

Construction staging would occur within the 10-acre Field Education Center/Field Research Station project site. Earth materials for construction of berms would be obtained from stockpiled earth materials on the UC Merced campus. No import of earth materials from off-site sources would be required.

3.7 PROJECT OPERATIONS

3.7.1 Project Building Space and Population

The proposed Field Education Center/Field Research Station would be used to conduct research and educational activities focused on the ecological resources of the UC Merced campus and the adjacent MPVGR. Initial project development would include a 2,500-square-foot pavilion and about 1,000 square feet of storage and restroom space, for a total of 3,500 square feet of building space. Later stages of project development would include an additional 7,000 square feet of building space to accommodate the Field Research Station.

An estimated two additional employees would be required for the Field Education Center/Field Research Station, including an education coordinator and a maintenance steward.

3.7.2 Field Education Center/Field Research Station Research and Educational Use Activities

The Field Education Center/Field Research Station would be used by undergraduate and graduate students enrolled at UC Merced and other institutions of higher education to conduct research and for educational purposes. The Field Education Center/Field Research Station would also be used to conduct field tours for K-12 students and community groups. The Field Education Center/Field Research Station would also be used to conduct one or two community events a year.

Table A below reflects the existing research and educational uses that are managed by the UC Merced Natural Reserve System (UCM NRS) and projected use levels for the Field Education Center/Field Research Station. The table shows the baseline levels of research and educational activities that occurred in 2022 as documented by the UCM NRS. The table also shows the average number of persons per event/activity and the number of events that involved accessing the MVPGR.

The table presents the projected number of events that are expected to occur at the full buildout of the Field Research Station (the number and range of events would be smaller under the initial Field Education Center stage of the project consistent with available space and staffing resources). The table also presents the average number of persons associated with these future events, as well as the percentage of events (by type) that would involve accessing the MVPGR from the new Field Research Station, and the typical duration of time that the users are projected to spend on the MVPGR. As the table shows, there would be a small increase in the number of events each year with project implementation. However, the majority of educational uses (K-12 field trips and Community Education events) would remain within the Field Education Center/Field Research Station site or the campus lands (i.e., within the vernal pool reconstruction area shown in **Figures 2 and 4**) and would not involve accessing MVPGR lands. The larger community events would also not involve any access to the MVPGR. As under existing conditions, about half of higher education field trips and most of the research groups would still continue to access the MVPGR for education and research purposes.

With the completion of the Field Education Center/Field Research Station, it is anticipated that more research and educational use of the campus lands would occur and the use of MPVGR for research and educational use would remain largely unchanged or would be reduced.

Table A: Field Education Center/Field Research Station Research and Educational Use Levels

Activity/Event	Baseline Number of Events Per Year (2022)	Average Number of Persons per Event Based on Baseline Data	Number of Events Involving MVPGR Access Based on Baseline Data	Projected Number of Events per Year with Project	Projected Average Number of Persons per Event with Project	Projected Events involving MVPGR Access	Typical Duration of time on MVPGR[1]
K-12 School Field Trip	4	25	0	15	30	0 (0 %)	—
Undergraduate Class Trip	36	24	18	40	30	20 (50 %)	30 minutes – 2 hours
Research Group	48	4	42	50	7	45 (90 %)	Variable
Education/Research Group	2	6	2	5	15	5 (100 %)	Variable
Community Education Group	13	18	8	20	20	5 (25 %)	15 minutes – 2 hours
Community Event	0	—	—	2	Up to 100	0 (0 %)	—

[1] Excludes time walking to and from the MVPGR through the campus lands, estimated at approximately 30 minutes each way.

All ground disturbing activities on campus lands are subject to the terms and conditions set forth in the ITP issued to the campus by the CDFW and the Biological Opinion issued by the USFWS. Therefore, any research projects that are undertaken by researchers on campus lands surrounding the Field Education Center/Field Research Station would comply with the ITP and BO.

With regard to the MVPGR, the Reserve includes three properties, the Campus Natural Reserve, VST lands, and the Myers Easterly lands. These three properties were established in 2009 as conservation lands to provide compensatory mitigation for the habitat and species loss associated with the development of the campus and University Community North. In 2014, all three properties were consolidated by the University into one management unit and were incorporated into the UC Natural Reserve System (UCNRS) as the MVPGR. Guidelines for the management of the MVPGR were set forth in the *2008 Management Plan for Conservation Lands and the Adjacent Campus Buildout Lands for the University of California, Merced* (hereby referred to as the *2008 Management Plan*) and since 2014, the access and use guidelines in the *2008 Management Plan* have been integrated into the UCNRS procedures and protocols to control access and guide all research and educational use that occurs on the MVPGR. All access to MVPGR is controlled. Only authorized persons may enter the Reserve upon receipt of approval from the University. No ground disturbing activities are allowed on the MVPGR other than activities that qualify as research use. The *2008*

Management Plan includes Appendix C, *Protocols for Research, Educational and Public Uses*[7] *on the UC Merced Conservation Lands*, which provides clear definitions of activities that qualify as allowable research and educational uses and includes procedures and protocols that are currently being implemented by the University to evaluate and approve, deny, or condition research and educational uses on the MVPGR to ensure compliance with the use guidance in the *2008 Management Plan*, the conservation easement, and other applicable State and federal laws and regulations. Research and Educational Use (REU) zones on the MVPGR are used to direct research and educational uses to the appropriate portions of the MVPGR so that impacts on sensitive resources from these uses are avoided or minimized.

Although the development of the Field Education Center/Field Research Station would have the potential to increase the research and educational use of the Reserve, access to this area will continue to be controlled, allowable activities will continue to be determined by the *2008 Management Plan*, conservation easement requirements, and relevant State and federal regulations, and access protocols will continue to be implemented to avoid significant impacts on the resources present on the Reserve. **Appendix A** presents the current protocols that will continue to be implemented by the University to evaluate and approve, deny, or condition research and educational uses on the MVPGR. As the prospective easement holder, CDFW is currently reviewing the *2008 Management Plan* and the current protocols for research and educational uses. All research and educational uses on the MVPGR and the associated review and implementation protocols for these uses would adhere to any Plan revisions based on CDFW's review.

3.7.3 Sustainability

Permanent structures built as part of the project would comply with the University of California Policy on Sustainable Practices (Sustainability Policy) and UC Merced's sustainable practice design guidelines. Project sustainability targets and goals include LEED minimum building certification level of Gold, if applicable, under the LEED Green Building Rating System, with incentives for Platinum.

The 2020 LRDP describes sustainability practices that would be employed at the campus to achieve the University's goals, which include reduction of waste, use of sustainable building materials for new construction projects, energy efficiency principles, minimization of water use, and incorporation of programs for alternate transportation to and from the campus. The 2020 LRDP establishes a "triple zero commitment" to produce zero net emissions, zero waste, and zero net water. Long term goals of the project include off the grid electricity, irrigation, potable water, wastewater, waste management, and internet coverage. Strategies to achieve these goals and maintain the "triple zero commitment" would be studied during the design phases of the project.

[7] Although the *2008 Management Plan* allows and includes guidelines for the provision of recreational and other public uses on the MVPGR and the existing VST conservation easement permits limited uses of this type, the University recognizes that the MVPGR has been conserved to provide compensatory mitigation for the impacts on threatened and endangered species from the development of the UC Merced campus and the associated University Community North, and that the protection and enhancement of the conservation values of these lands is the University's primary goal for these lands. As such, the University currently excludes and has no plans to allow recreational and non-educational public use of the MVPGR.

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4.0 COVERAGE UNDER THE 2020 LRDP

To determine the project's coverage under the 2020 LRDP, the following questions must be answered:

- Are the objectives of the project consistent with the objectives adopted for the 2020 LRDP?
- Are the changes to campus population associated with the project included within the scope of the 2020 LRDP's population projections?
- Is the proposed location of the project in an area designated for this type of use in the 2020 LRDP?
- Is the project included in the amount of the development projected in the 2020 LRDP?

Sections 4.1 through **4.4** document the project's coverage by and consistency with the objectives, population projections, land use designations, and development projections contained in the 2020 LRDP.

4.1 2020 LRDP OBJECTIVES

The overall goal of the 2020 LRDP is to continue the growth of UC Merced as a premier research university, consistent with the University of California's mission of teaching, research, and service excellence. The overarching objective of the 2020 LRDP is to provide an up-to-date land use plan to guide the physical planning and development of the next phase of campus growth from about 10,000 to 15,000 students, as well as to establish a paradigm for the campus' character.

The proposed Field Education Center/Field Research Station would support the following 2020 LRDP project objectives:

- Provide opportunities for on-campus academic field research.
- To the extent practicable, plan and develop the campus with sustainable design by incorporating energy efficiency, water conservation, protection of biological resources, waste reduction and minimization, on-site stormwater management and reduced dependence on automobiles.
- Promote community integration and reflect the landscape, history, resources, and diverse cultures of the San Joaquin Valley in terms of physical development.

4.2 2020 LRDP CAMPUS POPULATION

UC Merced opened in 2005 with 865 students, 67 faculty, and about 450 staff. The 2020 LRDP SEIR estimated that between 2020 and 2030, enrollment would increase from 9,700 full time equivalent (FTE) students to 15,000 students, an increase of about 5,300 students. Over the same period, faculty and staff would increase from 1,280 to 2,411, an increase of 1,131 persons. Overall, the campus population would increase by 6,431 persons (5,300 FTE students and 1,131 staff/faculty

personnel) (**Table B**). As such, by 2030 the UC Merced campus is projected to have a total population of 17,411 students, faculty, and staff.

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

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

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

As described in **Section 3.7**, the Field Education Center /Field Research Station would be used by undergraduate and graduate students enrolled at UC Merced and other institutions of higher education to conduct research and for educational purposes. The Field Education Center /Field Research Station would also be used to conduct field tours for K-12 students and community groups. An estimated two additional employees would be required for the Field Education Center/Field Research Station, including an education coordinator and a maintenance steward. Thus, the project would not result in an exceedance of students or employees beyond what was projected under the 2020 LRDP SEIR.

4.3 2020 LRDP LAND USE DESIGNATION

The project site is designated ROS in the 2020 LRDP land use diagram. This designation is given to lands that are suitable for and may be used to conduct active or manipulative field research and experimentation associated with the unique physiographic characteristics of the area (e.g., the vernal pool swale wetland features present on the land). According to the 2020 LRDP, lands with ROS land use designations would be maintained in their natural state except as needed for research, teaching, educational, and maintenance activities to support the University's educational and research mission.

As discussed in the 2020 LRDP, ROS lands, such as the old barn site, would be used for living outdoor laboratories, research, and educational purposes for higher and K-12 education. Development in this area would be limited to small scale facilities that generally include less than 10,000 square feet of building space, such as a field station facility, including overnight lodging to support critical research, education, and outreach programs. The proposed Field Education Center/Field Research Station would be consistent with the ROS designation.

The access road to the project site and the bridge across Le Grand Canal, as well as the vernal pool reconstruction area, are located on lands that are designated POS in the 2020 LRDP land use

diagram. Improvements to the bridge and access road and vernal pool creation as part of the proposed project would not conflict with this designation.

Thus, the project is consistent with land use designations in the 2020 LRDP.

4.4 2020 LRDP ACADEMIC BUILDING SPACE

The 2020 LRDP provides capacity for approximately 1.8 million gross square feet of additional academic space, housing, student life and athletics, and campus operations to accommodate the project growth on the campus under the 2020 LRDP.

The project would support the University's effort to provide additional capacity to accommodate potential teaching and research initiatives and would not exceed the academic building space contemplated in the 2020 LRDP. As described in **Section 3.3**, at project buildout, the project would increase the overall UC Merced building area by less than 10,000 square feet, including a 2,500-square-foot field education center with the future development of a 7,000-square foot field research station. Thus, the project is well within the amount of new building space anticipated under the 2020 LRDP.

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5.0 CONSISTENCY WITH THE 2020 LRDP SEIR AND 2009 LRDP EIS/EIR

The evaluation contained in this consistency review was conducted in accordance with Sections 15152 and 15183.5(a) of the State CEQA Guidelines which allow for tiered CEQA review provided the project's effects have been addressed in a prior programmatic analysis. The 2020 LRDP SEIR and 2009 LRDP EIS/EIR comprehensively addressed the potential environmental effects of campus growth and development due to implementation of future projects and activities proposed under the 2020 LRDP, including small scale projects such as the proposed project.

5.1 EVALUATION OF ENVIRONMENTAL IMPACTS

On the basis of the tiering and subsequent review concepts identified in the State CEQA Guidelines, UC Merced has defined the following categories in the environmental checklist used in this Addendum. Both categories rely on the relevant analyses in the 2020 LRDP SEIR and 2009 LRDP EIS/EIR:

Impacts Adequately Examined in the 2020 LRDP SEIR and 2009 LRDP EIS/EIR: This category is checked where the potential impacts of the project were adequately examined in the certified 2020 LRDP SEIR and 2009 LRDP EIS/EIR. Where applicable, mitigation measures identified in the 2020 LRDP SEIR would mitigate the impacts of the project. All applicable mitigation measures from the 2020 LRDP SEIR[8] would be incorporated into the project, as noted in **Section 6.0** of this Addendum.

Impacts Not Examined in the 2020 LRDP SEIR and 2009 LRDP EIS/EIR: If an item is checked in this section, this indicates potential effects of the project were not adequately evaluated in the certified 2020 LRDP SEIR and 2009 LRDP EIS/EIR. However, as described in the supporting text, the potential effects of the project would result in: a) no impact in the category, b) a less-than-significant impact in the category, or c) a new potentially significant impact. In the instance that a) or b) is checked, no additional CEQA documentation would be necessary. In the instance that c) is checked, additional CEQA documentation would be necessary to further address the impact. All applicable mitigation measures would be incorporated into the project, as noted in **Section 6.0** of this Addendum.

On the basis of the evaluation that follows, UC Merced finds that the project would not have new significant effects on the environment that have not already been addressed in the 2020 LRDP SEIR and 2009 LRDP EIS/EIR, no new mitigation measures or alternative are required beyond those identified and analyzed in the 2020 LRDP SEIR and the 2009 LRDP EIS/EIR, no substantial changes have occurred with respect to the circumstances under which the project will be undertaken, and no new information of substantial importance to the project has been identified.

[8] The 2020 LRDP SEIR includes applicable mitigation measures from the 2009 LRDP EIS/EIR.

5.2 AESTHETICS

Aesthetics Would the Project…	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
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 a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☒	☐	☐	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☒	☐	☐	☐

5.2.1 Impact Analysis

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

A scenic vista is generally defined as an expansive view of highly valued landscape as observable from a publicly accessible vantage point. The project site is located in the northern portion of the campus where views are primarily of rolling grasslands with views of the Sierra Nevada mountain range in the distance. Although the project site was previously occupied by a large barn, associated windmill and other farm structures, the barn and windmill were removed in 2019, and the site now contains only a large water tank associated with an on-site well and some storage structures. The proposed project would retain the water well and tank in place and would remove the storage structures. The Field Education Center/Research Station would consist of single-story, low-profile structures, designed with a natural aesthetic to blend with the surroundings. Additionally, berms would be constructed along the south side of the parking lot and buildings to conceal the new facilities from views from the south. Due to the small scale of development, its low profile, and screening by the berms, the proposed project would not affect scenic views of the northern portion of the campus and the adjacent MVPGR.

The Initial Study prepared for the 2020 LRDP SEIR concluded that campus development would have the potential to adversely affect views from Lake Yosemite Regional Park (Regional Park). However, with the implementation of **2020 LRDP Mitigation Measure AES-1a**, potentially significant effects of campus development on scenic vistas would be reduced to a less than significant level. **2020 LRDP**

Mitigation Measure AES-1a requires the planting of trees to screen views of the campus from the Regional Park site. The proposed project would be located in the northern portion of the campus site, at a distance of about 0.4 mile from the Regional Park. Due to the low profile and small size of the proposed structures and distance from Regional Park, the project would not be prominently visible and the impact on views from the Regional Park would be less than significant. Implementation of **2020 LRDP Mitigation Measure AES-1a** would not be required. The project would not result in new or substantially more severe impacts than those evaluated in the 2020 LRDP SEIR, and no new mitigation would be required.

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

As discussed in Section 5.1.b of the Initial Study prepared for the 2020 LRDP SEIR, the campus (including the project site) is not adjacent to a State scenic highway and therefore the project would not result in any impacts on scenic resources within view of a State scenic highway. Furthermore, there are no unique trees, rocky outcrops or historic buildings on the project site that could qualify as scenic resources. The project would result in no impact to scenic resources within view of a State scenic highway. Therefore, the project would not result in new or substantially more severe impacts than those evaluated in the 2020 LRDP SEIR, and no new mitigation would be required.

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

The project is located on the UC Merced campus in a non-urbanized area within the sphere of influence of the City of Merced. The visual character of the campus surrounding the project site is largely undeveloped and consists primarily of annual grasslands. Structures introduced as part of the project (e.g., Field Education Center/Field Research Station, utility/infrastructure buildings) would be located on lands designated as ROS, which allows for the development of structures for research, teaching, educational, and maintenance activities to support the University's educational and research mission. Improvements to the existing bridge and access road would be located in an area designated as POS, which allows for passive recreation such as walking, biking, and observation of nature.

The proposed buildings would be designed to be consistent with goals of the 2020 LRDP and follow the design guidance in the campus Physical Design Framework. The architectural design of the proposed buildings 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 buildings would be designed with a natural aesthetic to blend with the surroundings, and berms are included in the proposed project to screen views of the buildings and the parking lot from the south.

As discussed in Section 5.1.c of the Initial Study prepared for the 2020 LRDP SEIR, the 2020 LRDP included development of small structures, such as the Field Education Center, utility/infrastructure building, and eventually a Field Research Station, which are allowed under the designated land uses. The 2020 LRDP SEIR and Initial Study evaluated the visual impacts associated with campus

development under the 2020 LRDP. The proposed project is an element of the projected building space under the 2020 LRDP. Further, the project would implement **2020 LRDP Mitigation Measure AES-3a** (see **Section 6.1** of this Addendum) to ensure the new buildings and associated infrastructure improvements meet UC Merced design standards. Therefore, the project would not result in new or substantially more severe impacts than those evaluated in the 2020 LRDP SEIR, and no new mitigation would be required.

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

Impacts related to light and glare from the development of the UC Merced campus were analyzed in the Initial Study prepared for the 2020 LRDP SEIR. The area where the project would be located is undeveloped at this time and does not include any light sources. With the construction of the Field Education Center/Field Research Station, new light sources would be introduced in the northernmost portion of the campus. However, the project would not create a new source of substantial light and glare because the proposed buildings would be single-story and low profile. Berms would also be constructed along the southern sides of the new buildings and the parking lot so that interior lights emitted would not be visible from distant locations and would not affect nighttime views, and the glare from parked vehicles would also not affect daytime views. Further, the proposed buildings would be designed to be consistent with goals of the 2020 LRDP and follow the design guidance in the campus Physical Design Framework (i.e., "dark-sky" friendly lighting). Any lighting proposed for the exterior of the proposed building or along pedestrian paths, roads, or parking lots would be designed to be directed downward to avoid spill over. The proposed buildings and window façades would be developed with materials that do not generate glare. The guidelines of the 2020 LRDP would also be implemented for building design to reduce glare and excessive lighting.

Implementation of the 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 areas. The impact would be less than significant. Therefore, the project would not result in new or substantially more severe impacts than those evaluated in the 2020 LRDP SEIR, and no new mitigation would be required.

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

Agriculture and Forestry Resources Would the Project…	**Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR**	**Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR**		
		No Impact	**Less than Significant Impact**	**Potentially Significant Impact**
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?	☒	☐	☐	☐

5.3.1 Impact Analysis

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

Impacts on farmland were analyzed in the 2009 LRDP EIS/EIR and in the Initial Study for the 2020 LRDP SEIR. The analysis was based on the Farmland Mapping and Monitoring Program (FMMP) of

the California Department of Conservation, which maps the distribution of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance (collectively known as Important Farmland) on a biannual basis. The analysis concluded that approximately 40 acres of Important Farmland would be impacted by buildout of the UC Merced campus under the 2020 LRDP. However, this impact was not considered significant because the University has already placed a substantial number of acres of land in eastern Merced County under conservation easements. Furthermore, according to the FMMP, the project site is designated as "Grazing Land."[9] Therefore, the proposed project would not affect Important Farmland.

Although the overall project site is about 80 acres, as reflected in **Figure 2**, less than 10 acres would be developed with buildings, a parking lot, and roadways. The majority of the remaining acreage would remain in its current state and some would be used for vernal pool research, including the creation and restoration of vernal pools and swales. All of the areas that are not developed with impervious surfaces would continue to be grazed for fire fuel load control and control of noxious weeds. Furthermore, as discussed in Section 5.2.a of the Initial Study prepared for the 2020 LRDP SEIR, there are approximately 26,435 acres of grazing land within the MVPGR that have been permanently protected from development. These acreages would more than adequately compensate for the conversion of less than 10 acres of grazing land associated with the project. Since the project would be consistent with the small-scale projects evaluated as part of the 2020 LRDP SEIR and would not impact Important Farmland, the project would not result in new or substantially more severe impacts and no new mitigation would be required.

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

The UC Merced campus and project site is zoned by the County of Merced as Exclusive Agricultural (A-2); however, as the campus and site are State-owned, the County Zoning code does not apply. The UC Merced campus, including the project site, is not under a Williamson Act contract. As such, implementation of the project would not conflict with existing zoning for agricultural use nor would it conflict with a Williamson Act contract. The project would not result in new or substantially more severe impacts and no new mitigation would be required.

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

The UC Merced campus, including the project site, is not zoned for/as forest land, timberland, or timberland zoned Timberland Production. As such, implementation of the project would not conflict with existing forestland/timberland zoning designations/uses. Consistent with the analysis in the 2020 LRDP SEIR, no impact would occur and no mitigation would be required.

[9] California Department of Conservation, Farmland Mapping and Monitoring Program, 2018 Merced County, https://www.conservation.ca.gov/dlrp/fmmp. Accessed July 11, 2022.

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

The UC Merced campus is developed with buildings and associated improvements as well as open space. The project site is largely undeveloped and consists primarily of annual grasslands. There is no forest land on the UC Merced campus nor on the project site. As such, implementation of the project would not result in the loss of forest land or conversion of forest land to non-forest use. Consistent with the analysis in the 2020 LRDP SEIR, no impact would occur and no mitigation would be required.

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

The project site does not contain farmland nor forestland. Areas around the project site (off the UC Merced campus) do not include forestland although they do include some farmland. However, implementation of the project would not involve other changes in the existing environment that would result in conversion of nearby farmland (e.g., existing agricultural uses directly south of the campus) to non-agricultural use. Consistent with the analysis in the 2020 LRDP SEIR, no impact would occur and no mitigation would be required.

5.4 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.

Air Quality Would the Project…	**Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR**	**Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR**		
		No Impact	**Less than Significant Impact**	**Potentially Significant Impact**
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?	☒	☐	☐	☐

5.4.1 Impact Analysis

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

The project site is within the San Joaquin Valley Air Basin (SJVAB), which is within the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD is responsible for air quality regulation within the eight-county San Joaquin Valley region. Both the State and the federal government have established health-based Ambient Air Quality Standards (AAQS) for six criteria air pollutants: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, and suspended particulate matter ($PM_{2.5}$ and PM_{10}). The SJVAB is designated as non-attainment for O_3 and $PM_{2.5}$ for federal standards and non-attainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards.

CEQA requires that certain proposed projects be analyzed for consistency with the applicable air quality plan. As discussed in the 2020 LRDP SEIR, for air quality planning purposes, the SJVAPCD creates emissions inventories based on existing and foreseeable future land uses within its jurisdiction. According to the 2020 LRDP SEIR, if a new project is consistent with the planned land use designation that was considered in the development of an air quality management plan, the proposed project would not conflict with and would not obstruct implementation of the applicable air quality management plan. The 2020 LRDP SEIR found that growth at the campus has been accounted for and included in the air quality planning efforts of the region and would not conflict with or obstruct implementation of the applicable air quality plan, and that impacts would be less than significant.

The proposed project would consist of a Field Education Center in which a small pavilion, restrooms, limited storage, and parking would be constructed, and a Field Research Station in which the facilities would be expanded to provide a complete field station.

The Field Education Center /Field Research Station is consistent with the land uses and intensities of development identified in the 2020 LRDP. As discussed in Section 1.5.2 of the 2020 LRDP SEIR, the SEIR includes an evaluation of the environmental impacts from the construction and operation of small-scale development projects proposed on the campus under the 2020 LRDP. As stated there, small-scale projects would include, but not be limited to, small solar and alternative energy projects, educational and research projects (such as the Field Education Center/Field Research Station), and small ancillary buildings and structures and their associated infrastructure (i.e., utilities and roads). The proposed Field Education Center/Field Research Station is consistent with the land uses and intensities of development identified in the 2020 LRDP, and the project is within the scope of activities covered in the environmental impact evaluation in the 2020 LRDP SEIR. In addition, the proposed project would result in a nominal increase in campus population (two employees), and the increase in building space attributable to the proposed project is within the growth projections of the 2020 LRDP; therefore, the growth associated with the proposed project has been accounted for and included in the air quality planning efforts of the region and implementation of the proposed project would not conflict with or obstruct implementation of the applicable air quality plan. As such, consistent with the analysis in the 2020 LRDP SEIR, the project's impacts would be less than significant, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

The SJVAB is designated as non-attainment for O_3 and $PM_{2.5}$ for federal standards and non-attainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards. The SJVAPCD's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the SJVAPCD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary. The following analysis assesses the potential project-level construction- and operation-related air quality impacts.

Short-Term Construction. The 2020 LRDP SEIR analyzed the potential for campus development to result in an impact on air quality during construction activities. The 2020 LRDP SEIR analysis

assumed that by 2020 UC Merced would have constructed about 2.5 million gross square feet (gsf) of building space, and between 2020 and 2030, UC Merced would construct an additional 1.83 million gsf of building space within a 103-acre portion of the campus. The 2020 LRDP SEIR found that that campus construction would result in a less than significant impact on air quality with implementation of **2020 LRDP Mitigation Measures AQ-1a** and **AQ-1b** (see **Section 6.2** of this Addendum).

Similar to buildout of the LRDP, construction of the proposed project would require grading, site preparation, building, paving, and architectural coating activities. During construction of the proposed project, short-term degradation of air quality may occur due to the release of PM emissions (i.e., fugitive dust) generated by grading and paving activities. Emissions from construction equipment are also anticipated and would include CO, nitrogen oxides (NO_x), reactive organic gases (ROGs), directly emitted $PM_{2.5}$ and PM_{10}, and toxic air contaminants (TACs).

As identified above, the nominal increase in campus population, which along with the increase in building space attributable to the proposed project, is within the growth projections of the 2020 LRDP. Therefore, construction emissions associated with the proposed project are accounted for in the estimated annual construction emissions evaluated in the 2020 LRDP SEIR. In addition, UC Merced would continue to implement **2020 LRDP Mitigation Measures AQ-1a** and **AQ-1b**, which would require the implementation of fugitive dust control measures that would be applied during grading to comply with SJVAPCD Regulation VIII along with a requirement that Tier 4 construction equipment be used to minimize NO_x emissions during construction. With implementation of **2020 LRDP Mitigation Measures AQ-1a** and **AQ-1b**, impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR, no new or substantially more severe construction air quality impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

Long-Term Operation. The 2020 LRDP SEIR analyzed the potential for campus development under the 2020 LRDP to result in an impact on air quality from campus operations. That analysis, which was presented under Impact AQ-2 of the SEIR, analyzed impacts of campus facilities involving the addition of approximately 1.83 million gsf of building space, including 0.67 million gsf of academic space, such as classrooms, laboratory and research areas, and alumni and conference centers; 0.33 million gsf of student life and athletic uses; 0.48 million gsf of campus operations; 0.35 million gsf of housing; and approximately 1,680 parking spaces to accommodate approximately 15,000 students and 2,411 employees. The 2020 LRDP SEIR concluded that campus operations would result in a significant impact on air quality due to ROG and NO_x emissions that would exceed SJVAPCD thresholds. The 2020 LRDP SEIR found that operational impacts would remain significant and unavoidable even with the implementation of **2020 LRDP Mitigation Measures AQ-2a** and **AQ-2b**.

Similar to the impacts identified in the 2020 LRDP SEIR, long-term air pollutant emission impacts that would result from the proposed project are those associated that are associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity and natural gas), and area sources (e.g., architectural coatings and the use of landscape maintenance equipment).

As identified above, the proposed project would result in a nominal increase in campus population, which along with the increase in building space attributable to the proposed project, is within the

growth projections of the 2020 LRDP SEIR analyses; therefore, the operational emissions that would result due to the proposed project are included in the estimated emissions reported and evaluated in the 2020 LRDP SEIR. UC Merced would continue to implement **2020 LRDP Mitigation Measures AQ-2a** and **AQ-2b**, which would include measures to reduce emissions from vehicles and from area and energy sources, such as improving traffic control, encouraging transit, pedestrian, and bicycle use, installing low maintenance landscaping, and using electric vehicles in their fleet. Therefore, with the implementation of **2020 LRDP Mitigation Measure AQ-2b**, no new or substantially more severe operational air quality impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

CO Hotspots. The 2020 LRDP SEIR analyzed the potential for campus development under the 2020 LRDP to cause high levels of CO due to traffic associated with the campus. That analysis analyzed impacts of a 15,000-student campus in 2030. The 2020 LRDP SEIR evaluated the potential for the 2020 LRDP to cause or contribute to high CO concentrations using the CO screening guidance provided by the Bay Area Air Quality Management District (BAAQMD). This guidance provides that a project would have a less-than-significant impact with respect to CO levels if the addition of project traffic would not increase the total traffic at any affected intersection to more than 44,000 vehicles per hour. Buildout under 2020 LRDP would generate 8,406 total daily trips or 739 AM peak hour trips and 808 PM peak hour trips. The 2020 LRDP SEIR found that traffic at all intersections affected by the 2020 LRDP would be less than 44,000 vehicles per hour. Therefore, the 2020 LRDP SEIR found that the 2020 LRDP would not result in the violation of the CO standards and would not expose sensitive receptors to substantial CO concentrations and impacts would be less than significant.

Similar to the impacts identified in the 2020 LRDP SEIR, CO emitted by traffic associated with the proposed project would have the potential to result in substantial concentrations. As discussed in **Section 5.18**, Transportation, of this Addendum, the proposed project would generate fewer than 110 daily vehicle trips. Therefore, similar to buildout of the LRDP, the proposed project's contribution to peak hour traffic volumes at intersections in the vicinity of the project site would be well below 44,000 vehicles per hour. Therefore, the proposed project would not result in localized CO concentrations that exceed State or federal standards and this impact would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. The proposed project would not result in any new or more severe localized CO impacts that have not already been addressed in the 2020 LRDP SEIR, and no new mitigation would be required.

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

The 2020 LRDP SEIR found that development under the 2020 LRDP would result in less-than-significant impacts related to exposure of sensitive receptors to substantial pollutant concentrations. Sensitive receptors are defined as people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling units. The closest sensitive receptors to the southernmost limits of the proposed project (i.e., the bridge crossing Le Grand Canal) are the Tuolumne and Mariposa student housing buildings, located approximately 1,700 feet (0.3 mile) southwest of the project site. The proposed Field Education Center/Field Research Station site, where construction activities would be concentrated, is located approximately 1 mile north of these student housing buildings.

Construction of the proposed project may expose surrounding sensitive receptors to airborne particulates, as well as a small quantity of construction equipment pollutants (i.e., usually diesel-fueled vehicles and equipment). However, project contracts would be required to implement **2020 LRDP Mitigation Measures AQ-1a** and **AQ-1b**, which would require the implementation of fugitive dust control measures that would be applied during grading to comply with SJVAPCD Regulation VIII along with a requirement that Tier 4 construction equipment be used to minimize NO_x emissions during construction. Once the proposed project is constructed, the proposed project would not be a significant source of long-term operational emissions. With implementation of **2020 LRDP Mitigation Measures AQ-1a** and **AQ-1b**, the project's impacts would be less than significant consistent with the analysis in the 2020 LRDP SEIR, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

The 2020 LRDP SEIR found that construction activities under the 2020 LRDP would require the use of diesel-fueled equipment, architectural coatings, and asphalt, all of which have an associated odor. However, the 2020 LRDP SEIR found that these odors are not pervasive enough to cause objectionable odors affecting a substantial number of people. In addition, the 2020 LRDP SEIR found that buildout operations under the 2020 LRDP would not be a significant source of odors. Therefore, the 2020 LRDP SEIR found that implementation of the 2020 LRDP would not cause or be affected by odors. This impact was found to be less than significant.

Similar to the 2020 LRDP, construction of the proposed project would require the use of diesel-fueled equipment and architectural coatings, both of which generate odors. However, these odors would be short-term and temporary and would not be pervasive enough to affect a substantial number of people.

Once operational, the proposed project would include development of a field education center and field research station. Routine operation of the proposed project would not involve activities that typically produce odors such as wastewater treatment, manufacturing, agriculture, etc. Occasional use of maintenance products around and within the project site could produce localized odors, but they would be temporary and limited in area. Impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR, and the proposed project would not result in any new or more severe odor impacts compared to those previously identified in the 2020 LRDP SEIR, and no new mitigation would be required.

5.5 BIOLOGICAL RESOURCES

Biological Resources Would the Project…	**Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR**	**Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR**		
		No Impact	**Less than Significant Impact**	**Potentially Significant Impact**
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?	☒	☐	☐	☐

Impacts on biological resources that would occur with development of the campus were evaluated in the 2020 LRDP SEIR. The Field Education Center/Field Research Station project site, which is located within an area designated for development by the 2020 LRDP, has been subject to disturbance related to historic and existing agricultural uses, including cattle grazing and associated native-surfaced and gravel-surfaced access roads, fencing, and grazing infrastructure (e.g., corral, water troughs).

As described in Section 1.5.2 of the 2020 LRDP SEIR, the SEIR includes an evaluation of the environmental impacts that would occur with construction and operation of small-scale development projects (i.e., less than 10,000 square feet of building space or less than 2 acres of

ground disturbance) proposed on the campus under the 2020 LRDP. The proposed Field Education Center/Field Research Station would include less than 10,000 square feet of new building space and would be located within an area of the campus designated ROS, which is consistent with the definition of small-scale projects evaluated in the 2020 LRDP SEIR. Although the project would be located on lands identified in the 2020 LRDP for this use, the proposed project would also support an increase in research and educational activities on the adjacent MVPGR, which was not analyzed in the 2020 LRDP SEIR.

Existing land cover types within the overall Field Education Center/Field Research Station project site shown in **Figure 2**, as described in the 2020 LRDP SEIR, include developed (ruderal) associated with the former barn site, and California annual grassland (non-native annual grassland) within the vernal pool reconstruction and access improvement areas. While there are no aquatic features located within the Field Education Center/Field Research Station site, there are remnant vernal pools and swale wetlands located along the 15-foot-wide unpaved road that extends to the site from the south. The vernal pool reconstruction area also includes vernal pools and swale wetlands that were not subject to previous campus grading activities, as well as seasonal freshwater marsh areas (canal wetlands) located along Le Grand Canal in the southernmost portion of this area.

Vegetation in the non-native annual grassland and ruderal area is dominated by non-native annual grasses such as soft chess (*Bromus hordeaceus*), oats (*Avena fatua*, *A. barbata*), foxtail barley (*Hordeum murinum* ssp. *Leporinum*), and rattail sixweeks grass (*Festuca myuros*), but it also contains a high diversity of native grasses and native and non-native forbs, such as filarees (*Erodium cicutarium*, *E. moschatum*, *E. botrys*), shining peppergrass (*Lepidium nitidum*), small-flowered fiddleneck (*Amsinckia menziesii*), mouseear chickweed (*Cerastium glomeratum*), dwarf brodiaea (*Brodiaea nana*), wild hyacinth (*Triteleia hyacinthina*), Ithuriel's spear (*T. laxa*), yellow mariposa lily (*Calochortus luteus*), and black mustard (*Brassica nigra*). The project site is devoid of trees except for one mature eucalyptus tree (*Eucalyptus* sp.) in the southwestern portion of the Field Education Center/Field Research Station site.

As described in the 2020 LRDP SEIR, the dominant plant species in the remnant vernal pools on the project site typically include coyote thistle (*Eryngium* sp.), vernal pool goldfields (*Lasthenia fremontii*), bristled downingia (*Downingia bicornuta*), adobe popcornflower (*Plagiobothrys acanthocarpus*), stalked popcornflower (*P. stipitatus*), woolly marbles (*Psilocarphus brevissimus* var. *brevissimus*), white meadowfoam (*Limnanthes alba*), annual hairgrass (*Deschampsia danthonioides*), and Pacific foxtail (*Alopecurus saccatus*). The swales on the project site lack a well-defined channel and are sparsely vegetated or are dominated by mesic grassland species such as Italian rye grass. The seasonal freshwater marsh areas located in the southernmost portion of the project site along Le Grand Canal (within the vernal pool reconstruction area) are typically dominated by Pacific rush, common spikerush (*Eleocharis macrostachya*), willow, cattail, and vernal pool buttercup (*Ranunculus bonariensis* var. *trisepalus*).

Aquatic features were delineated within the project site prior to the development of the campus. Seasonal wetlands, including approximately 1.9 acres of canal wetlands, exist within the southern limits of the vernal pool reconstruction area along the northern bank of Le Grand Canal. There are approximately 2.3 acres of swale wetlands and 0.03 acre of vernal pools located on the project site

within the non-native annual grassland associated with the access improvement and vernal pool reconstruction areas shown in **Figure 2**.

As described in **Section 3.1.1** of this Addendum, the MVPGR comprises the 5,030-acre VST Preserve, the 1,339-acre Campus Natural Reserve, and the 97-acre Myers Easterly property (**Figure 1**). UC Merced owns and manages the MVPGR in accordance with existing conservation easements and the *2008 Management Plan*. As required by the University's regulatory permits, the *2008 Management Plan* includes policies regarding various land uses and management commitments to protect and maintain MVPGR conservation values with a focus of management attention on the following species:

- Succulent owl's-clover (*Castilleja campestris* ssp. *succulenta*)
- Colusa grass (*Neostapfia colusana*)
- San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*)
- Conservancy fairy shrimp (*Branchinecta conservatio*)
- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Midvalley fairy shrimp (*Branchinecta mesovallensis*)
- Vernal pool tadpole shrimp (*Lepidurus packardi*)
- California tiger salamander (*Ambystoma californiense*)
- San Joaquin kit fox (*Vulpes macrotis mutica*)

The MVPGR is undeveloped aside from dirt roads and existing grazing infrastructure, including fencing and gates, stock ponds, water troughs, windmills with groundwater pumps and storage tanks, wells, etc. The MVPGR primarily supports annual grassland-vernal pool complex habitat. Similar to the Field Education Center/Field Research Station project site, annual grasslands on the MVPGR are dominated by naturalized non-native Mediterranean grasses and forbs, but they also include a component of native species. Seasonal cattle grazing helps maintain the viability of the vernal pools by controlling the spread of non-native plant species. In addition to the vernal pools, swales, pool/swale complexes, mima mound areas, clay slope wetlands, and clay playas that exist on the MVPGR, there are 14 stock ponds, ranging in size from approximately 0.05 acre to 10.4 acres.[10] Many of the stock ponds are seasonal, but the largest ponds are perennial during normal to wet rain years and support breeding by California tiger salamanders. Le Grand Canal crosses the southernmost portions of the MVPGR in two locations, and Black Rascal Creek is located in the remote eastern portion of the MVPGR.

As described in **Section 3.7.2**, the Field Education Center/Field Research Station would be used by undergraduate and graduate students enrolled at UC Merced and other institutions of higher education to conduct research focused on annual grassland-vernal pool complex habitat and for educational purposes, while also adhering to all resource preservation and management requirements to protect special-status species. The Field Education Center/Field Research Station

[10] LSA. 2020. Conceptual Landscape Restoration Plan – Merced Vernal Pools and Grassland Reserve. July.

would also be used to conduct field tours for K-12 students and community groups. With the completion of the Field Education Center/Field Research Station, it is anticipated that potentially more research and educational use of the adjacent undeveloped campus lands would occur and use of the MVPGR would remain largely unchanged and may even be reduced compared to existing conditions. However, access to these areas will continue to be controlled by the UCM NRS and the UC Merced Physical and Environmental Planning Department (UCM PEPD), allowable activities on the MVPGR will continue to be determined by UCM NRS access request process, the *2008 Management Plan*, the conservation easement, and relevant State and federal laws and regulations, and existing access protocols will continue to be implemented by the University to avoid significant impacts on the resources present on the MVPGR. Section 5.5, Research and Educational Uses Program of the *2008 Management Plan*[11] provides the general guidance to allow scientific research and educational uses that are compatible and do not compromise the conservation and mitigation objectives for these lands. **Appendix A** presents the current protocols that will continue to be implemented by the University to evaluate and approve, deny, or condition research and educational uses on the MVPGR. Typical research and educational uses on the MVPGR are described below.

Typical Research Activities on the MVPGR. A variety of research projects have been implemented and tracked on the MVPGR since its establishment as a University of California Natural Reserve System site. Most research activities involve small teams of researchers (typically 1 – 4 researchers), and the frequency of visits to the MVPGR ranges from one-time visits to repeated visits. Most research projects on the MVPGR are observational in nature (i.e., "passive research"). Passive or observational research activities typically involve visual data collection without any physical sampling or soil disturbance (e.g., counts, quantifying percent cover, etc.). Projects that involve more than observational activities (i.e., "active research") typically include collection of samples and/or some level of soil or water disturbance.

Typical Educational Activities on the MVPGR. A variety of educational activities have also occurred on the MVPGR. Educational activities are generally observational in nature (i.e., "passive education"). A small subset of activities, typically but not always involving university-level classes, are more active in nature and involve collection of specimens or samples (i.e., "active education"). These projects then are subject to the full research approval process. The majority of educational groups visit the MVPGR once per year, with a subset of classes or groups visiting the MVPGR multiple times within a year. Group sizes can range from a few people to upwards of 40 people for some of the university-level classes, but groups of 15-25 people are most common. As reflected in **Table A**, larger educational groups, such as undergraduate class trips and community education groups, typically visit the MVPGR for short durations (i.e., less than 2 hours). The "active education" classes are typically small, more similar to the size of research groups. Generally, most educational groups access the MVPGR on foot from the two main access roads along the western side of the MVPGR, and thus most education use occurs in Research and Educational Use (REU) Zone 10a, along the road in REU Zone 10b, and within the western portions of REU Zones 6a, 6b, and 7 closest to the

[11] As the prospective easement holder, CDFW is currently reviewing the *2008 Management Plan* and the current protocols for research and educational uses. All research and educational uses on the MVPGR and the associated review and implementation protocols for these uses would adhere to any Plan revisions based on CDFW's review.

road (see **Figure A-1** in **Appendix A**). Sparse educational use may occur in other areas of the MVPGR, following the priority areas of the management plan and the type of educational activity, as described in **Appendix A**.

5.5.1 Impact Analysis

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

Impacts on biological resources, including special-status plant and wildlife species, that would occur with development of the campus, were evaluated in the 2020 LRDP SEIR.

Table C lists the special-status species with the potential to occur within or in the vicinity of the Field Education Center/Field Research Station project site. This assessment is based on a reconnaissance survey conducted by LSA on March 21-23, 2022; protocol level rare plant surveys conducted by LSA on March 21-23 and June 7-8, 2022; and recent preconstruction surveys and biological monitoring conducted south of the project site between 2015 and 2020 for the recently completed UC Merced "2020 Project," consistent with the mitigation measures in the 2009 LRDP EIS/EIR, the 2020 LRDP SEIR, as well as the conditions specified by UC Merced's existing State and federal permits for campus development. Updated species lists from the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IpaC)[12], California Natural Diversity Data Base (CNDDB)[13], and California Native Plant Society (CNPS) Online Database[14] were also reviewed.

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

Name	Scientific Name	Listing[1]		
		Federal	State	Other
Plants				
Colusa grass	*Neostapfia colusana*	T	E	1B.1
Dwarf downingia	*Downingia pusilla*	--	--	1B.2
Hogwallow starfish	*Hesperevax caulescen*	--	--	4.2
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	--

12 U.S. Fish and Wildlife Service. 2022. Information for Planning and Consultation (IPac) Online Threatened and Endangered Species Lists. Sacramento Fish and Wildlife Office.

13 California Department of Fish and Wildlife (CDFW). 2022. California Natural Diversity Database - Rarefind 5 online computer program. Sacramento, CA. Sacramento, California.

14 California Native Plant Society, Rare Plant Program. 2022. Inventory of Rare and Endangered Plants of California (online edition). Website: http://www.rareplants.cnps.org.

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

Name	Scientific Name	Listing[1]		
		Federal	State	Other
California horned lark	*Eremophilia alpestris actia*	--	SSC	--
California tiger salamander	*Ambystoma californiense*	T	T	--
Crotch bumble bee	*Bombus crotchii*	--	SA	--
Ferruginous hawk	*Buteo regalis*	--	SSC	--
Golden eagle	*Aquila chrysaetos*	--	FP	--
Loggerhead shrike	*Lanius ludovicianus*	--	SSC	--
Midvalley fairy shrimp	*Branchinecta mesovallensis*	--	SA	--
Monarch butterfly	*Danaus plexippus*	FC	--	--
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	--

[1] Endangered (E), Threatened (T), Federal Candidate Species (FC), Species of Special Concern (SSC), Fully Protected (FP), CDFW Special Animals List (SA), California Rare Plant Rank 1B.1, 1B.2, 4.2

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

Special-Status Plant Species. As described in Section 4.2 of the 2020 LRDP SEIR, although potentially suitable habitat exists within undeveloped areas of the overall 1,026-acre campus site for 17 special-status plant species, surveys conducted to date (including those conducted in advance of the 2009 LRDP EIS/EIR and for the 2020 Project, as reflected in Table 4.2-4 of the 2020 LRDP SEIR) have not identified many of these species within the campus site. The 2020 LRDP SEIR indicates that five special-status plant species—succulent owl's clover (*Castilleja campestris* ssp. *succulent*), Colusa grass (*Neostapfia colusana*), San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*), dwarf downingia (*Downingia pusilla*), and shining navarretia (*Navarretia nigelliformis* subsp. *radians*)—are known to occur within the vicinity of the Field Education Center/Field Research Station project site based on documented sightings. However, all five species are associated with vernal pool or clay flat wetland habitat, which is limited to the approximately 2.3 acres of swale wetlands and 0.03 acre of vernal pools located on the project site within the non-native annual grassland (i.e., in the access improvement and vernal pool reconstruction areas). Appropriately timed spring and summer protocol level rare plant surveys conducted by LSA in 2022, as required by UC Merced's Incidental

Take Permit (ITP) (No. 2081-2009-010-04)[15] for State-listed succulent owl's clover, Colusa grass, and San Joaquin Valley Orcutt grass, did not identify any of these species on the project site. As specified by the ITP, State-listed species, if located within a campus development area, must be relocated per a CDFW-approved relocation plan. Hogwallow starfish (*Hesperevax caulescent*), which is designated as a List 4.2[16] species by the CNPS California Rare Plant Rank (CRPR) system, was identified in the vernal swales within the vernal pool reconstruction area during the botanical surveys conducted by LSA. However, UC Merced has already fully compensated for the loss of habitat for special-status plant species within the campus development area, which includes the project site. The 2020 LRDP SEIR documents UC Merced's compensation for the loss of special-status vernal pool plant species as a result of overall campus development (i.e., preservation of nearly 24,000 acres of conservation lands with suitable habitat).

As the protocol level rare plant surveys for listed species within the project site were negative and the loss of special-status plant habitat was previously compensated for, the impacts from the construction of the proposed project on special-status plant species would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts related to special-status plants would occur from the construction of the project that have not already been addressed in the 2020 LRDP SEIR, and no new mitigation would be required.

Special-status plants that are known to occur on the MVPGR include the species listed in **Table C**, as well as Sanford's arrowhead (*Sagittaria sanfordii*), spiny-sepaled button-celery (*Eryngium spinosepalum*), Hoover's calycadenia (*Calycadenia hooveri*), legenere (*Legenere limosa*), Merced phacelia (*Phacelia ciliata* var. *opaca*), Merced monardella (*Monardella leucocephala*), Stinkbells (*Fritillaria agrestis*), Beaked clarkia (*Clarkia rostrata*), Henderson's bentgrass (*Agrostis hendersonii*), Pincushion navarretia (*Navarretia myersii*), Ewan's larkspur (*Delphinium hansenii* ssp. *ewanianum*), and Bogg's Lake hedge-hyssop (*Gratiola heterosepala*).[17] These species do not have formal listing status under the federal or State Endangered Species Acts but are considered rare by the CNPS under the CRPR system. Most of these species are associated with vernal pool and swale habitat, but some are known from the grassland areas on the MVPGR. UC Merced and UCM NRS maintain current records of the locations of special-status species on the MVPGR, and surveys are conducted annually to monitor population trends for listed plant species addressed in the *2008 Management Plan*, including succulent owl's clover, Colusa grass, and San Joaquin Valley Orcutt grass, consistent with the *UC Merced Special-Status Species Monitoring Plan* for the MVPGR.[18]

Consistent with the conservation easements for the MVPGR, no permanent infrastructure, outside of what is described in the MVPGR Grazing Management Plan, is allowed on the MVPGR. As

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

16 Plants with a California Rare Plant Rank of 4 are of limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly.

17 University of California, Merced. 2022a. *Rare Plants and Common Invasive Plants of the Reserve* website: https://vernalpools.ucmerced.edu/ecosystem/reserve-rare-plant-and-common-invasive-plant-list. Accessed November 9, 2022.

18 LSA. 2019a. *UC Merced Special-Status Species Monitoring Plan.* Prepared for the University of California, Merced. March 6.

described in **Section 3.7.1** of this Addendum, the proposed Field Education Center/Field Research Station project does not include the development of facilities on the MVPGR, but the project would support an increase in research and educational uses. Increased uses on the MVPGR have the potential to include ground disturbance that could potentially remove, crush, or trample special-status plants or their habitat if they occur within designated research or educational use areas. Increased disturbance could also introduce invasive plants and create dust that may result in death or decreased vigor of special-status plants.

However, consistent with the *2008 Management Plan* and the current protocols described in **Appendix A**, access to the MVPGR is currently and would continue to be controlled by the University to avoid impacting special-status plants. All potential users are required to obtain approval from the University to access the MVPGR. All access requests are reviewed for consistency with UCNRS mission and policies, the *2008 Management Plan*, conservation easements, relevant State and federal regulatory requirements, and for potential impacts to plant or animal species and associated habitat. At the time of evaluation, the University also determines any necessary conditions and specialized monitoring needs, and all users must abide by the standard UCM NRS access requirements referenced in **Appendix A**, including requirements to minimize the spread of invasive plant species on the MVPGR and requirements for equipment decontamination within aquatic features. Furthermore, the University currently provide a monthly summary of the research and educational uses planned for the upcoming month to CDFW, as the prospective easement holder, for input in advance of the implementation of the proposed uses. UC Merced would continue to adhere to any revised research and educational use approval and implementation protocols based on CDFW's input throughout the conservation easement establishment process.

The *2008 Management Plan* directs that research should be conducted on land areas where it will have the least effect on conservation resources. In its review of access requests, the University considers the availability of alternative sites in less sensitive areas (e.g., undeveloped campus lands located east of the proposed Field Education Center/Field Research Station site or less sensitive areas of the MVPGR). Thus, allowable research does and would occur where it is deemed to have the least effect on special-status plant habitat while meeting research objectives. As reflected above, UC Merced annually monitors the status of listed plant populations for signs that they may be decreasing in distribution, spatial extent, and/or abundance, consistent with the *Special-Status Species Monitoring Plan* for the MVPGR. The University would continue to maintain a continuously updated map showing known locations of special-status plants, which aids the University in directing research and educational uses away from sensitive areas whenever feasible, unless the research is specific to the conservation and/or recovery of a special-status species. The UCM NRS also evaluates and would continue to evaluate research and educational use locations in relation to the REU Zones and mapped sensitive areas to ensure that activities do not become overly concentrated in any one area, causing cumulative effects.

As described in this section above, most current and proposed research projects are/would be considered "passive research" that do not involve any physical sampling or soil disturbance. However, some "active research" projects that include collection of samples and/or soil or water disturbance are conducted on the MVPGR. Typically, no large-scale manipulation of the ground is currently or would be allowed under the proposed project, although research projects that benefit

the long-term survival or recovery of a species such as restoration projects may be allowed based on a review by the University and input from CDFW, the prospective conservation easement holder. Minor ground disturbing activities typically include installation of piezometers and soil moisture sensors, limited soil boring or soil collection, or other minimal disturbances that do not occur within wetlands/vernal pools, small mammal burrows, or other sensitive environments, including habitat for special-status plant species. Research activities that result in more substantial ground disturbance would be subject to *2008 Management Plan* Guideline HE-1, which requires conducting pre-disturbance surveys by a qualified biologist for presence of special-status species, avoiding special-status species and wetlands, stockpiling topsoil, and implementing erosion control measures (e.g., dust suppression, reseeding/restoring disturbance areas).

Take of listed plant species associated with research activities would be limited. Any research that has the potential to involve the direct take or harm of listed plant species would be carefully evaluated by the University in consultation with CDFW and USFWS, as specified in **Appendix A**. In alignment with the overall UCM NRS use and access evaluation guidelines, federal and State regulations, and conservation easement requirements, any use on the MVPGR lands that has the potential to result in the take of a listed species, reduces habitat quality, or causes the permanent or long-term change in the natural environment (e.g., long-term reduction in population numbers of threatened and endangered species) would not be considered an allowable use unless authorization is granted from USFWS, CDFW, and the easement holder. Researchers would be required to provide proof of Incidental Take Permit (ITP), Scientific Collecting Permit (SCP), and/or and recovery permit to take any listed plant species. Even with the necessary permits, a researcher's proposed use may still not be approved if the University, with input from the USFWS, CDFW, and conservation easement holder, determines the project would negatively impact a species to a degree it could not recover from quickly.

Educational uses are regulated in the same manner as research uses, and most educational activities are observational in nature. As reflected in **Table A**, upon project completion, none of the 15 annual K-12 school field trips, 50 percent of the 40 annual undergraduate class trips, and 25 percent of the 20 annual community education groups would occur on the MVPGR; all other similar uses would occur within the undeveloped campus lands. No community events would occur on the MVPGR. Under existing conditions, for educational uses that occur on the MVPGR, most educational groups access the MVPGR on foot from the two main access roads along the western side of the MVPGR, and thus most education use occurs in the western portion of the MVPGR (in REU Zone 10a, along the road in REU Zone 10b, and within the western portions of REU Zones 6a, 6b, and 7 closest to the road; see **Figure A-1** in **Appendix A**). This would be the same under the proposed project. Sparse educational use may occur in other areas of the MVPGR, following the priority areas of the *2008 Management Plan* described above and the type of educational activity. As reflected in **Table A**, larger educational groups, such as undergraduate class trips and community education groups, would be present on the MVPGR for short durations (i.e., less than 2 hours). Furthermore, consistent with the policies described in **Appendix A**, all non-UC Merced groups are required to be accompanied by the UCM NRS staff or their trained UC delegate, and all proposed education uses on the MVPGR would be required to comply with all applicable policies and regulatory requirements, similar to those for research activities.

In summary, with the implementation of applicable processes, policies, and guidelines, as summarized above and as specified in **Appendix A**, potential impacts on special-status plant species on the MVPGR due to increased research and educational uses would be less than significant. These policies and guidelines include: continued University-controlled access; University review for consistency with the *2008 Management Plan*, conservation easement, and other regulatory requirements; ongoing coordination with CDFW, the prospective easement holder, and adherence to any future changes in research and educational use approval and implementation protocols based on input from CDFW; careful siting of activities within appropriate areas to avoid impacting special-status plant species or their habitat; application of access conditions and specialized monitoring needs (e.g., pre-disturbance surveys by a qualified biologist, best management practices to reduce spread of invasive plant species, staying on designated roads, etc.); limiting take of listed plant species and ensuring that any required permits or permissions from the USFWS, CDFW, and the easement holder are obtained; continued annual monitoring of special-status plant populations to track population trends and apply adaptive management actions as needed; and limiting certain educational uses on the MVPGR and/or assigning them to less sensitive areas on the MVPGR. Therefore, no new significant impacts related to special-status plants on the MVPGR would occur due to the proposed project, and no new mitigation would be required.

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

Special-Status Amphibians and Reptiles. As described in Section 4.2 of the 2020 LRDP SEIR, California tiger salamander (CTS), western pond turtle (*Actinemys mormorata*), and western spadefoot (*Spea hammondii*) are known to occur within the vicinity of the project area based on documented sightings. Both western pond turtle and western spadefoot are State species of special concern, while CTS is both State- and federally-listed as threatened.

California Tiger Salamander. All undeveloped areas within the 1,026-acre campus site that were evaluated in the 2020 LRDP SEIR are considered occupied upland habitat for CTS. As described in the 2020 LRDP SEIR, 171 acres of the campus site that provide suitable upland habitat for CTS were previously graded and developed. The overall 80-acre Field Education Center/Field Research Station project site is considered suitable upland habitat for CTS. Thus, the proposed project would result in impacts to CTS habitat to accommodate the proposed Field Education Center/Field Research Station. However, as described in the 2020 LRDP SEIR, UC Merced has already mitigated for the loss of 1,648 acres of CTS upland habitat via the preservation of nearly 17,600 acres of conservation lands. Furthermore, based on the spring 2022 reconnaissance survey conducted by LSA and previous surveys of the project area by UC Merced staff, there is no suitable CTS breeding habitat on the project site. Therefore, due to the mitigation that has already been put in place, the project's impacts related to the loss of CTS upland habitat associated with the construction of the Field Education Center/Field Research Station would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts related to CTS upland habitat would occur that have not already been addressed in the 2020 LRDP SEIR, and no new mitigation would be required.

Barn Pond, located on the MVPGR immediately north of the project site, is a known CTS breeding location, and there are small mammal burrows located throughout the project site

that provide underground refuge for CTS. Thus, the presence of CTS within the project site cannot be ruled out due to known or potential breeding ponds to the north and east on the MVPGR. Ground disturbance associated with project construction could thus result in injury or mortality to individual CTS. UC Merced's existing ITP and Biological Opinion (BO) (USFWS file number 1-1-02-F-0107)[19] contain several measures to avoid and minimize take of CTS. These measures include requirements for a USFWS and CDFW-approved Designated Biologist to conduct preconstruction surveys, excavate small mammal burrows, and monitor construction activities. UC Merced also provides an education program for all workers on the construction site that describes CTS and measures that must be implemented to protect this species. A CTS relocation plan has been developed and approved to salvage individual CTS found within the campus site. The ITP also requires the installation of a CTS exclusion fencing within 1.3 mile of known or potential CTS breeding habitat and excavation of small mammal burrows prior to project construction (ITP Amendment No. 3). UC Merced would continue to implement all requirements of the ITP and BO as part of the proposed project. The project would thus have a less-than-significant impact on CTS during construction, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts related to CTS take would occur that have not already been addressed in the 2020 LRDP SEIR, and no new mitigation would be required.

As described above, the MVPGR supports annual grassland and vernal wetland habitats (vernal pools, swales, and clay slope wetlands) as well as constructed stock ponds dating back to the early 20th century for cattle grazing activities. While effectively managed livestock grazing is compatible with the conservation values of the MVPGR, the 14 created stock ponds have diverted water away from previously existing vernal pools/swales. However, as a result of the consistent and extended hydroperiod of many of these constructed features, they do provide important breeding habitat for CTS. The University has been conducting annual CTS breeding surveys since 2015, and there are 14 known breeding locations on the MVPGR, including 12 stock ponds and two large naturally formed playa pools (referred to as the Western Lake Playa Pool and Southern Playa Pool).[20] Small mammal burrow complexes located throughout the MVPGR provide suitable underground refuge (upland) habitat for CTS, similar to undeveloped non-native grassland areas of the campus.

Increases in research and educational uses of the MVPGR as a result of the construction of the proposed Field Education Center/Field Research Station has the potential to include ground disturbance that could potentially result in injury or death (take) of CTS if they are present within designated research or educational uses areas.

Consistent with the *2008 Management Plan*, the current use and access protocols described in **Appendix A,** and as described above for special-status plants, access to the MVPGR is currently and would continue to be controlled by the University to avoid impacting CTS upland and breeding habitat. As part of the use evaluation process, the University also provides a monthly

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

20 LSA. 2019a. op. cit.

summary of the research and educational uses planned for the upcoming month to CDFW, the prospective easement holder, for input prior to implementation and would continue to adhere to any revised approval and implementation protocols based on CDFW's input throughout the conservation easement establishment process. The University also determines any necessary conditions and specialized monitoring needs, including pre-disturbance surveys conducted by a qualified biologist to identify and flag existing burrow complexes for avoidance, biological monitoring, and/or seasonal research activity restrictions (e.g., during or immediately after rain events when CTS may be migrating from breeding locations), consistent with current UC Merced practices. The University would continue to conduct annual CTS breeding surveys to monitor the status of CTS breeding populations on the MVPGR for signs that they may be decreasing in distribution, spatial extent, and/or abundance, consistent with the *Special-Status Species Monitoring Plan* for the MVPGR. UC Merced would continue to maintain an updated map showing known breeding locations in order to site research and educational use activities away from sensitive areas, consistent with the prioritization of alternative sites specified under the *2008 Management Plan*. The UCM NRS would also continue to evaluate research and educational use locations to ensure that activities do not become overly concentrated in any one area, causing cumulative effects.

Most current and proposed research projects would not involve any physical sampling or soil disturbance. When permitted, research activities with minor ground disturbance (e.g., installation of piezometers or limited soil collection) are sited so they would not occur within wetlands/vernal pools or upland areas with burrow complexes that provide habitat for CTS. Research activities that result in more substantial ground disturbance would be subject to *2008 Management Plan* Guideline HE-1, which requires conducting pre-disturbance surveys by a qualified biologist for presence of special-status species, avoiding special-status species and wetlands, stockpiling topsoil, and implementing erosion control measures. Typically, no large-scale manipulation of the ground is currently or would be allowed, although research projects that benefit the long-term survival or recovery of a species such as restoration projects may be allowed based on a review by the University and input from CDFW, the prospective conservation easement holder. Any restoration actions would be subject to regulatory agency approval prior to implementation to ensure that any potential impacts to CTS upland or breeding habitat is avoided or minimized.

As reflected above, take of listed wildlife species, including CTS, associated with research activities would be limited. Any research that has the potential to involve the direct take or harm of listed species, including CTS, would be carefully evaluated by the University in consultation with CDFW and USFWS, as specified in **Appendix A**. In alignment with the overall UCM NRS use and access evaluation guidelines, federal and State regulations, and conservation easement requirements, any use on the MVPGR lands that has the potential to result in the take of a listed species, reduces habitat quality, or causes the permanent or long-term change in the natural environment (e.g., long-term reduction in population numbers of threatened and endangered species) would not be considered an allowable use unless authorization is granted from USFWS, CDFW, and the easement holder. However, even with the necessary permits, a researcher's proposed use may still not be approved if the University, with input from the

USFWS, CDFW, and conservation easement holder, determines the project would negatively impact a species to a degree it could not recover from quickly.

Educational uses would be regulated in the same manner as research uses, and most educational activities are and would continue to be observational in nature. As reflected in **Table A**, none of the 15 annual K-12 school field trips, 50 percent of the 40 annual undergraduate class trips, and 25 percent of the 20 annual community education groups would occur on the MVPGR; all other similar uses would occur within the undeveloped campus lands. No community events would occur on the MVPGR. Under existing conditions, for educational uses that occur on the MVPGR, most educational groups would access the MVPGR on foot from the two main access roads along the western side of the MVPGR, and use areas would typically be as shown in **Figure A-1** in **Appendix A**. As reflected in **Table A**, larger educational groups, such as undergraduate class trips and community education groups, would be present on the MVPGR for short durations (i.e., less than 2 hours). All non-UC Merced groups would be accompanied by UCM NRS staff or their trained UC delegate.

In summary, with the implementation of applicable policies and guidelines, as summarized above and as specified in **Appendix A**, potential impacts on CTS on the MVPGR due to increased research and educational uses would be less than significant. These policies and guidelines include: continued University-controlled access; University review for consistency with the *2008 Management Plan*, conservation easement, and other regulatory requirements; ongoing coordination with CDFW, the prospective easement holder, and adherence to any future changes in research and educational use approval and implementation protocols based on input from CDFW; careful siting of activities within appropriate areas to avoid impacting CTS or their habitat; application of access conditions and specialized monitoring needs (e.g., pre-disturbance surveys by a qualified biologist, flagging burrow complexes for avoidance, biological monitoring, etc.); limiting take of CTS and ensuring that any required permits or permissions from the USFWS, CDFW, and the easement holder are obtained; continued annual monitoring of CTS breeding populations to track population trends and apply adaptive management actions as needed; and limiting certain educational uses on the MVPGR and/or assigning them to less sensitive areas on the MVPGR. Therefore, no new significant impacts to CTS on the MVPGR would occur due to the proposed project, and no new mitigation would be required.

Western Spadefoot. Habitats suitable for CTS are often also suitable for western spadefoot. However, hand excavation of burrows on the 2020 Project site located west of the project site and extensive dip net surveys of aquatic features on the adjacent MVPGR have not resulted in the detection of western spadefoot. Furthermore, LSA did not detect this species within the project site during surveys conducted in 2022. Thus, it is not expected that western spadefoot would be affected either directly or indirectly by the proposed project. The avoidance and protection measures for CTS would also serve to protect this species, should an individual enter a campus work site. The policies described in **Appendix A** associated with authorization of research and educational uses on the MVPGR, as described above for CTS, would be applicable to western spadefoot. Therefore, the project impact on western spadefoot associated with the construction of the proposed Field Education Center/Field Research Station and increased research and educational uses on the MVPGR would be less than significant. No new significant

impacts related to western spadefoot would occur due to the proposed project, and no new mitigation would be required.

Western Pond Turtle. As described in the 2020 LRDP SEIR, UC Merced has already compensated for the loss of western pond turtle habitat through the preservation of a minimum of 175 acres of suitable habitat for the species on conservation lands. While western pond turtle was not observed during surveys conducted by LSA within the freshwater marsh areas of the Field Education Center/Field Research Station project site (i.e., within the southern limits of the vernal pool reconstruction area), this species is known from an existing campus stormwater basin located south of the project area and could potentially occur within the freshwater marsh area located adjacent to Le Grand Canal. The Field Education Center/Field Research Station project site, which is located approximately 0.15 mile north of Le Grand Canal, does not provide suitable habitat for this species.

While Field Education Center/Field Research Station construction activities would not impact this species, any vernal pool reconstruction that occurs adjacent to suitable habitat near Le Grand Canal could potentially result in injury or mortality of western pond turtle. However, UC Merced's 2009 Construction Mitigation Plan (CMP)[21], which is a requirement of the BO, requires that a biologist conduct preconstruction surveys for western pond turtle prior to initial ground-disturbing activities in all suitable aquatic habitats within 100 feet of the work area. If pond turtles are not observed, no additional mitigation is required. If pond turtles are observed, they would be allowed to move out of the way on their own. If active nests are found, they would be fenced with an appropriate buffer and avoided until the young have hatched and are able to move out of the work area on their own. With the implementation of this CMP measure, potential project impacts to western pond turtle would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts related to Western pond turtle would occur that have not already been addressed in the 2020 LRDP SEIR, and no new mitigation would be required.

On the MVPGR, potentially suitable aquatic habitat for western pond turtle is limited to the stock ponds and along Le Grand Canal in the southern portion of the property. This species was observed by LSA at Northwest Hill Pond during a previous CTS breeding survey on the MVPGR. Observational research and educational uses on the MVPGR would not result in potential injury or mortality to this species due to the limited duration and type of activity (i.e., no ground disturbance). While some "active research" projects that include minor ground disturbing activities currently occur and would continue to occur on the MVPGR under the proposed project, these typically include installation of piezometers and soil moisture sensors, limited soil boring or soil collection, or other minimal disturbances that do not occur within wetlands/vernal pools, small mammal burrows, or other sensitive environments, including habitat for special-status species such as western pond turtle. Research activities that result in more substantial ground disturbance within or adjacent to stock ponds that provide suitable aquatic and nesting habitat for western pond turtle would be subject to *2008 Management Plan* Guideline HE-1, which requires conducting pre-disturbance surveys by a qualified biologist for presence of

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

special-status species, avoiding special-status species and wetlands, and implementing erosion control measures.

Therefore, with the implementation of applicable policies and guidelines, as specified in **Appendix A**, potential impacts on western pond turtle on the MVPGR due to increased research and educational uses would be less than significant. These policies and guidelines include: continued University-controlled access; University review for consistency with the *2008 Management Plan*, conservation easement, and other regulatory requirements; ongoing coordination with CDFW, the prospective easement holder; careful siting of activities within appropriate areas to avoid impacting western pond turtle or their habitat; application of access conditions and specialized monitoring needs (e.g., pre-disturbance surveys by a qualified biologist); and limiting certain educational uses on the MVPGR and/or assigning them to less sensitive areas on the MVPGR. Therefore, no new significant impacts to western pond turtle on the MVPGR would occur due to the proposed project, and no new mitigation would be required.

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

As described in the 2020 LRDP SEIR, special-status birds known to nest on or near the campus include burrowing owl, Swainson's hawk, and tricolored blackbird. In April 2018, a Swainson's hawk nest was identified in a Cottonwood tree west of the Fairfield Canal, located approximately 0.3 mile south of the proposed project site (Le Grand Canal bridge crossing). During surveys conducted by LSA in 2022, two adult Swainson's hawks with one fledgling were observed soaring over the southern portion of the campus near this previous nest location, but no specific nest was identified. While the eucalyptus tree located within the Field Education Center/Field Research Station project site provides marginal nesting habitat for Swainson's hawk, this species typically prefers denser trees, and no nesting activity has been previously been observed at this location. Potential burrowing owl habitat is located within the annual grassland vegetation throughout the overall 80-acre project site, and small mammal burrows were observed during surveys conducted by LSA in 2022. Suitable nesting habitat for tricolored blackbird is limited to vegetation along Le Grand Canal within the vernal pool reconstruction area. Other special-status birds for which there is suitable nesting habitat on and adjacent to the project site include California horned lark, white-tailed kite, short-eared owl, and loggerhead shrike. The campus and adjacent lands also contain suitable nesting habitat for numerous non-special-status migratory birds, including red-tailed hawk (*Buteo jamaicensis*), red-winged blackbird (*Agelaius phoeniceus*), killdeer (*Charadrius vociferous*), mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), and cliff swallow (*Petrochelidon pyrrhonota*), whose nests are protected under the MBTA and CFGC Sections 3503 and 3503.5.

Grading and vegetation removal would occur on the site during project construction. Project implementation has the potential to disturb active special-status and non-special-status migratory bird nests if ground-disturbing or vegetation removal activities occur during the

nesting season (generally February 15 through August 15). The destruction or disturbance of active nests resulting in nest failure or loss of individuals would be a potentially significant impact, consistent with the analysis in the 2020 LRDP SEIR. However, **2020 LRDP Mitigation Measure BIO-9a** (see **Section 6.3** of this Addendum), as well as the conditions in UC Merced's ITP for Swainson's hawk (e.g., preconstruction nesting surveys, no disturbance buffers, etc.), would be implemented during Field Education Center/Field Research Station construction to reduce potential impacts to special-status and non-special-status migratory bird nests to less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts related to special-status birds and nesting birds would occur due to project construction that have not already been addressed in the 2020 LRDP SEIR, and no new mitigation would be required.

As described in the 2020 LRDP SEIR, UC Merced's location along the Pacific Flyway migratory route and its setting within a diverse environment that provides habitat for many resident bird species increases the potential for bird collisions with tall buildings on the campus. **2020 LRDP Mitigation Measure BIO-9b**, which specifies bird safe design considerations, was included in the 2020 LRDP SEIR to reduce potential impacts associated with bird collisions to less than significant. However, the proposed Field Education Center/Field Research Station would consist of single-story, low-profile structures, designed to blend with the natural surroundings. The project would not include design features (e.g., reflective surfaces or breezeways) that would result in resident or migratory bird collisions. Therefore, no new or substantially more severe impacts related to bird collisions would occur from project construction that have not already been addressed in the 2020 LRDP SEIR, and no new mitigation would be required.

Based on the areas identified in the 2020 LRDP for campus development (including the project site), the loss of foraging habitat for Swainson's hawk and other special-status bird species from the development of the campus under the 2020 LRDP was estimated and reported in the 2020 LRDP SEIR. The SEIR also noted that UC Merced has preserved more than 20,000 acres of foraging habitat for Swainson's hawk and other bird species within the conservation lands. As the project site is included within the development area described and analyzed in the 2020 LRDP SEIR, construction of the Field Education Center/Field Research Station would result in a less-than-significant impact to foraging habitat for Swainson's hawk and other special-status bird species, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts related to foraging habitat would occur from project construction that have not already been addressed in the 2020 LRDP SEIR, and no new mitigation would be required.

As specified by the conservation easements for the MVPGR, no permanent infrastructure, outside of what is described in the *2008 Management Plan* and existing conservation easements, is allowed on the MVPGR. As described in **Section 3.7.1** of this Addendum, the proposed Field Education Center/Field Research Station does not include the development of facilities on the MVPGR, but the project would support an increase in research and educational uses. Increased uses on the MVPGR have the potential to include vegetation disturbance that could result in disruption of foraging/nesting behavior and removal of suitable nesting habitat for special-status bird species, which is primarily limited to ground-nesting species due to the

preponderance of non-native grassland habitat on the MVPGR. No significant loss of foraging habitat would occur based on the restrictions imposed by the conservation easements and *2008 Management Plan* that prohibit permanent infrastructure or development.

Consistent with the *2008 Management Plan*, the current protocols described in **Appendix A,** and as described above, access to the MVPGR is currently and would continue to be controlled by the University to avoid directly impacting suitable nest sites (e.g., via vegetation/nest removal) or indirectly impacting/disrupting ongoing nesting activity (e.g., via increased visitor use near nest sites). All access requests are reviewed for consistency with the *2008 Management Plan*, conservation easements, UCNRS mission and policies, and other regulatory requirements, including the MBTA and CFGC. As part of the use evaluation process, the University also determines any necessary conditions and specialized monitoring needs, including pre-disturbance surveys conducted by a qualified biologist to identify and flag existing nest sites and burrow complexes for avoidance and potential monitoring, consistent with current UC Merced practices. As described above, most current and proposed research and educational uses do not involve any ground disturbance or vegetation removal; when permitted, activities with minor ground disturbance (e.g., installation of piezometers or limited soil collection) are sited so they would not occur within burrow complexes that provide habitat for burrowing owls.

Research activities that result in more substantial ground disturbance that could involve the removal of active nest sites would be subject to *2008 Management Plan* Guideline HE-1, which requires conducting pre-disturbance surveys by a qualified biologist, including a survey for nesting bird species and potential no-disturbance buffer monitoring for activities conducted during the nesting season. Swainson's hawk nests are typically stick nests in trees. Since the MVPGR is mostly devoid of woody vegetation and no known nest sites occur on the MVPGR, removal of any existing or potential nest sites for this species would not occur under the proposed project. UC Merced intends to plant mitigation trees for Swainson's hawk near Barn Pond (just north of the Field Education Center/Field Research Station project site), as required by the University's ITP for the previous removal of a nest tree as part of campus development. However, these trees would not be removed as part of any proposed research or educational uses on the MVPGR.

As reflected in **Table A**, most research and educational groups would be small in size and would visit the MVPGR infrequently and for short durations, such that potential indirect impacts to bird nesting activity would be avoided and minimized. Visits by larger educational groups, such as undergraduate class trips and community education groups, would also be infrequent and of short duration (less than 2 hours) and would typically involve accessing the MVPGR on foot within areas closest to the road in the western portion of the MVPGR (in REU Zones 10a and Zone 10b, and within the western portions of REU Zones 6a, 6b, and 7; see **Figure A-1** in **Appendix A**), which would limit any potential disruption of nest sites within the less disturbed areas of the MVPGR. As described above, UC Merced would continue to locate research and educational use activities on the MVPGR away from sensitive areas (e.g., future potential nest sites for Swainson's hawk near Barn Pond) when there is the potential to disrupt nesting activities, consistent with the prioritization of alternative sites specified under the *2008 Management Plan*.

Therefore, with the implementation of applicable policies and guidelines, as specified in **Appendix A**, potential impacts on special-status birds and other protected nesting birds on the MVPGR due to increased research and educational uses would be less than significant. These policies and guidelines include: continued University-controlled access; University review for consistency with the *2008 Management Plan*, the conservation easement, and other regulatory requirements, including the MBTA and CFGC; ongoing coordination with CDFW, the prospective easement holder; careful siting of activities within appropriate areas to avoid impacting nesting birds; application of access conditions and specialized monitoring needs (e.g., pre-disturbance surveys and buffer zone monitoring by a qualified biologist) as required for compliance with the MBTA and CFGC; and limiting certain educational uses on the MVPGR and/or assigning them to less sensitive areas on the MVPGR. Therefore, no new significant impacts related to special-status birds and other nesting birds on the MVPGR would occur due to the proposed project, and no new mitigation would be required.

Special-Status Invertebrates. As described in Section 4.2 of the 2020 LRDP SEIR, suitable habitat for vernal pool fairy shrimp (*Branchinecta lynchi*; federally-listed as threatened), vernal pool tadpole shrimp (*Lepidurus packardi*; federally-listed as endangered), and Midvalley fairy shrimp (*Branchinecta mesovallensi*; CDFW Special Animal) remains within the 1,026-acre campus site. Crotch bumble bee (*Bombus crotchii*) became a candidate endangered species under the California Endangered Species Act (CESA) in 2019 during the preparation of the 2020 LRDP SEIR. However, due to ongoing litigation[22], this species does not currently have legal status under CESA but is currently listed on CDFW's 2022 Special Animals List, which identifies special-status species and "species at risk." Non-native annual grassland areas within the project site, in particular those areas with fossorial (burrowing) mammal activity, provide potential nest sites for Crotch bumble bee. Similarly, the monarch butterfly (*Danaus plexippus*) is a candidate species under the federal Endangered Species Act (ESA) that has not yet been listed or proposed for listing. Candidate species have no legal protection under the ESA, but the monarch does meet the CEQA definition of a special-status species. This species migrates through the San Joaquin Valley primarily in the spring and fall. Butterflies lay eggs on the larval host plant milkweed (*Ascelpias* sp.). Based on rare plant surveys conducted by LSA in 2022, no milkweed species were observed within the project site, but a single monarch butterfly was observed in the project area on March 23, 2022.

Vernal Pool Crustaceans. Vernal pool fairy shrimp, vernal pool tadpole shrimp, and Midvalley fairy shrimp are associated with vernal pools that form in depressions, usually in grassland habitats. These species may also occur in other wetlands that provide habitat similar to vernal pools, such as alkaline rain pools, ephemeral drainages, rock outcrop pools, ditches, stream oxbows, stock ponds, vernal swales, and some seasonal wetlands. While vernal pool tadpole

[22] On November 13, 2020, the Sacramento County Superior Court issued a ruling in Almond Alliance v. California Fish and Game Commission, deeming the State of California lacks authority to list four threatened bumble bee species as endangered under CESA, including the Crotch bumble bee. In February 2021, the Commission filed a Notice of Appeal through the California Attorney General's Office. In May 2022, a court ruled that CESA can apply to invertebrates, including insects. As of the date of this EIR Addendum, the California Fish and Game Commission has not yet voted to reinitiate the process of listing this species under CESA.

shrimp and Midvalley fairy shrimp are not known from the 1,026-acre campus site based on previous surveys that were conducted prior to the development of the campus, vernal pool fairy shrimp were identified adjacent to the project site south of Le Grand Canal and along the existing access road, as well as on the adjacent MVPGR to the north and east. While this species may occur in the remnant vernal pools and swales located on the project site within the non-native annual grassland in the access improvement and vernal pool reconstruction areas, the loss of this habitat is already accounted for in prior impact analysis and UC Merced has already fully compensated for the loss of habitat for vernal pool crustaceans throughout the campus site. As reflected in the 2020 LRDP SEIR, the University has acquired nearly 24,000 acres of conservation lands that would protect 1,006 acres of occupied habitat for vernal pool fairy shrimp, as well as 14 acres of occupied habitat for vernal pool tadpole shrimp. Habitat preserved for these species is also suitable for Midvalley fairy shrimp. Therefore, the project's potential impacts on vernal pool fairy shrimp, vernal pool tadpole shrimp, and Midvalley fairy shrimp associated with access improvements and vernal pool reconstruction is accounted for under the impacts of the 2020 LRDP and fully compensated by the mitigation that has been already implemented. The project's impact would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts related to vernal pool crustaceans would occur from project construction that have not already been addressed in the 2020 LRDP SEIR, and no new mitigation would be required.

The MVPGR provides extensive vernal pool and swale habitat for special-status vernal pool crustaceans, including vernal pool fairy shrimp, vernal pool tadpole shrimp, and Midvalley fairy shrimp. Conservancy fairy shrimp (*Branchinecta conservatio*), which is listed as endangered under the federal ESA, requires large, deep vernal pools that are not present within the UC Merced campus or the Field Education Center/Field Research Station project site. However, there is one known occurrence of Conservancy fairy shrimp on the MVPGR within an approximately 1.6-acre playa pool. As described above, the University maintains current records of the locations of special-status species on the MVPGR, and surveys are conducted annually to monitor population trends for special-status species addressed in the *2008 Management Plan*, including vernal pool fairy shrimp, vernal pool tadpole shrimp, Midvalley fairy shrimp, and Conservancy fairy shrimp, consistent with the *UC Merced Special-Status Species Monitoring Plan* for the MVPGR.

As described in **Section 3.7.1** of this Addendum, the proposed Field Education Center/Field Research Station does not include the development of facilities on the MVPGR, but the project would support an increase in research and educational uses. Increased uses on the MVPGR have the potential to include ground disturbance that could potentially result in take of listed vernal pool crustaceans associated with research or educational use activities that may occur within suitable wetland habitat.

However, consistent with the *2008 Management Plan* and the current protocols described in **Appendix A**, access to the MVPGR is currently and would continue to be controlled by the University to avoid impacting special-status vernal pool crustaceans. All potential users are required to obtain approval from the University to access the MVPGR. All access requests are reviewed for consistency with the *2008 Management Plan*, conservation easements, relevant

State and federal regulatory requirements, UCNRS mission and policies, and for potential impacts to plant or animal species and associated habitat. At the time of evaluation, the University also determines any necessary conditions and specialized monitoring needs, and all users must abide by the standard UCM NRS access requirements referenced **in Appendix A**, including requirements to minimize the spread of invasive plant species on the MVPGR and requirements for equipment decontamination within aquatic features. Furthermore, the University currently provides a monthly summary of the research and educational uses planned for the upcoming month to CDFW, as the prospective easement holder, for input in advance of the implementation of the proposed uses. UC Merced would continue to adhere to any revised research and educational use approval and implementation protocols based on CDFW's input throughout the conservation easement establishment process.

As reflected in **Appendix A**, the *2008 Management Plan* directs that research should be conducted on land areas where it will have the least effect on conservation resources, including listed vernal pool crustaceans. In its review of access requests, the University considers the availability of alternative sites in less sensitive areas (e.g., undeveloped campus lands located east of the proposed Field Education Center/Field Research Station site or less sensitive areas of the MVPGR outside of the watershed occupied by Conservancy fairy shrimp). The University would continue to conduct annual vernal pool crustacean surveys to monitor the status of populations on the MVPGR for signs that they may be decreasing in distribution, spatial extent, and/or abundance, consistent with the *Special-Status Species Monitoring Plan* for the MVPGR. The University would continue to maintain a continuously updated map showing known locations of vernal pool crustaceans, which aids the University in directing research or educational uses away from sensitive areas whenever feasible, unless the research is specific to the conservation and/or recovery of a special-status species. The University also evaluates and would continue to evaluate research and educational use locations in relation to the REU Zones and mapped sensitive areas to ensure that activities do not become overly concentrated in any one area, causing cumulative effects.

As described above, most current and proposed research projects would not involve any physical sampling or soil disturbance. When permitted, research activities with minor ground disturbance (e.g., installation of piezometers or limited soil collection) are sited so they would not occur within wetlands/vernal pools that provide habitat for vernal pool crustaceans. Research activities that result in more substantial ground disturbance would be subject to *2008 Management Plan* Guideline HE-1, which requires conducting pre-disturbance surveys by a qualified biologist for presence of special-status species, avoiding special-status species and wetlands, stockpiling topsoil, and implementing erosion control measures. Typically, no large-scale manipulation of the ground is currently or would be allowed, although research projects that benefit the long-term survival or recovery of a species such as restoration projects may be allowed based on a review by the University and CDFW, the prospective easement holder. Any restoration actions would also be subject to USFWS approval prior to implementation to ensure that any potential impacts to listed vernal pool crustaceans are avoided or minimized.

As reflected above, take of listed wildlife species, including vernal pool fairy shrimp, and vernal pool tadpole shrimp, associated with research activities would be limited. Any research that has

the potential to involve the direct take or harm of listed species would be carefully evaluated by the University in consultation with CDFW and USFWS, as specified in **Appendix A**. In alignment with the overall UCM NRS evaluation guidelines, federal and State regulations, and conservation easement requirements, any use on the MVPGR lands that has the potential to result in the take of listed vernal pool crustacean species, reduces habitat quality, or causes the permanent or long-term change in the natural environment (e.g., long-term reduction in population numbers of threatened and endangered species) would not be considered an allowable use unless authorization is granted from USFWS and the easement holder. Even with the necessary permits, a researcher's proposed project may still not be approved if the University, with input from USFWS, CDFW, and the conservation easement holder, determines the project would negatively impact a species to a degree it could not recover from quickly.

Educational uses would be regulated in the same manner as research uses, and most educational activities are and would continue to be observational in nature. As reflected in **Table A**, none of the 15 annual K-12 school field trips, 50 percent of the 40 annual undergraduate class trips, and 25 percent of the 20 annual community education groups would occur on the MVPGR; all other similar uses would occur within the undeveloped campus lands. No community events would occur on the MVPGR. Under existing conditions, for educational uses that occur on the MVPGR, most educational groups access the MVPGR on foot from the two main access roads along the western side of the MVPGR and remain outside of wetland habitat within the educational use areas as shown in **Figure A-1** in **Appendix A**. As reflected in **Table A**, visits by larger educational groups, such as undergraduate class trips and community education groups, would be of short duration (i.e., less than 2 hours). All non-UC Merced groups would be accompanied by UCM NRS staff or their trained UC delegate.

Thus, with the implementation of applicable policies and guidelines, as summarized above and as specified in **Appendix A**, potential impacts on vernal pool crustaceans on the MVPGR due to increased research and educational uses would be less than significant. These policies and guidelines include: continued University-controlled access; University review for consistency with the *2008 Management Plan*, conservation easement, and other regulatory requirements; ongoing coordination with CDFW, the prospective easement holder, and adherence to any future changes in research and educational use approval and implementation protocols based on input from CDFW; careful siting of activities within appropriate areas to avoid impacting wetland habitat; application of access conditions and specialized monitoring needs (e.g., pre-disturbance surveys by a qualified biologist, flagging wetland features for avoidance, post-disturbance erosion control and seeding, etc.); limiting take of listed vernal pool crustaceans and ensuring that any required permits or permissions from the USFWS and the easement holder are obtained; continued annual monitoring of vernal pool crustacean breeding populations to track population trends and apply adaptive management actions as needed; and limiting certain educational uses on the MVPGR and/or assigning them to less sensitive areas on the MVPGR. Therefore, no new significant impacts to vernal pool crustaceans on the MVPGR would occur due to the proposed project, and no new mitigation would be required.

Crotch Bumble Bee and Monarch Butterfly. While there have been no documented observations of Crotch bumble bee within the 1,026-acre campus or the MVPGR to the north and east of the

project site, the campus is within the historical range for this species, and any crevices or openings within the annual grassland areas on the project site could provide potentially suitable underground nesting habitat for this species. Should Crotch bumble bee colonies or overwintering queens be present in underground nests on the project site, construction activities within non-native annual grassland areas could adversely affect this species and its habitat. In the event that Crotch bumble bee is again considered a candidate species or is formally listed under CESA, **2020 LRDP Mitigation Measure BIO-4** (see **Section 6.3** of this Addendum) would be implemented during initial construction activities on the project site. With the implementation of this mitigation measure, any potential impacts on Crotch bumble bee would be reduced to less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts related to Crotch bumble bee would occur from project construction that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

With regard to monarch butterfly, should milkweed host plants be present within the Field Education Center/Field Research Station site during construction activities, construction of the proposed project could potentially result in mortality if monarch eggs, larvae, or chrysalides are present on the milkweed plants at the time they are removed. Narrowleaf milkweed (*Asclepias fascicularis*) has been previously observed by LSA within the developed areas of the campus approximately 0.75-mile south of the project site. However, no milkweed host plants were observed on the project site during the rare plant surveys conducted on March 21-23 and June 7-8, 2022. Due to the absence of milkweed host plants within the site based on botanical surveys, the proposed project would not impact breeding habitat. Furthermore, if monarch butterfly is listed under the federal ESA, UC Merced would reinitiate consultation with the USFWS pursuant to Section 7 of the federal ESA, and the University's existing BO would be amended to address this species and all required conservation measures would be implemented. Therefore, no new significant impacts would occur, and no additional mitigation would be required.

On the MVPGR, the vernal pool grassland provides potentially suitable habitat for Crotch bumble bee; however, as noted above, this species has not been observed on the campus or the MVPGR. Milkweed host plants for monarch butterfly, including narrowleaf milkweed and California milkweed (*Asclepias californica*), have the potential to occur on the MVPGR, but UC Merced does not have any documented records of monarch butterfly breeding on the MVPGR.[23] Observational research and educational uses on the MVPGR would not result in potential injury or mortality to these species due to the limited duration (e.g., less than 2 hours for larger education groups) and type of activity (i.e., no ground disturbance). While some "active research" projects that include minor ground disturbing activities currently occur and would continue to occur on the MVPGR under the proposed project, these typically include installation of piezometers and soil moisture sensors, limited soil boring or soil collection, or other minimal disturbances that do not occur within wetlands/vernal pools, small mammal burrows, or other sensitive environments. Research activities that result in more substantial ground disturbance would be subject to *2008 Management Plan* Guideline HE-1, which requires conducting pre-

[23] University of California, Merced. 2022d. *Vascular Plant Species List for the MVPGR* website: https://vernalpools.ucmerced.edu/ecosystem/reserve-vascular-plant-list. Accessed January 10, 2023.

disturbance surveys by a qualified biologist and avoiding habitat for special-status species (i.e., potential breeding habitat for monarch butterfly and wetlands and burrow complexes that provide floral resources and underground habitat for Crotch bumble bee), and implementing erosion control measures.

Therefore, with the implementation of applicable policies and guidelines, as specified in **Appendix A**, potential impacts on Crotch bumble bee and monarch butterfly on the MVPGR due to increased research and educational uses would be less than significant. These policies and guidelines include: continued University-controlled access; University review for consistency with the *2008 Management Pla*n, conservation easement, and other regulatory requirements; ongoing coordination with CDFW, the prospective easement holder; careful siting of activities within appropriate areas to avoid impacting habitat for Crotch bumble bee and monarch butterfly (wetlands, burrow complexes, and potential breeding habitat for monarch butterfly); application of access conditions and specialized monitoring needs (e.g., pre-disturbance surveys by a qualified biologist); and limiting certain educational uses on the MVPGR and/or assigning them to less sensitive areas on the MVPGR. Therefore, no new or significant impacts to Crotch bumble bees or monarch butterfly on the MVPGR would occur due to the project, and no new mitigation would be required.

San Joaquin Kit Fox. As described in the 2020 LRDP SEIR, there is low potential for San Joaquin kit foxes (*Vulpes macrotis mutica*) to occur on the Field Education Center/Field Research Station project site because the species has not been observed on or near the campus since its establishment, including on the adjacent approximately 6,500-acre MVPGR where camera monitoring has been conducted annually since 2015. The most recent documented occurrence in the project vicinity is from 1999 (CNDDB Occurrence No. 26), approximately 2.5 miles southeast of the project site and approximately 0.5 mile south of the MVPGR. Regardless, there is some potential for kit foxes to disperse through the project site, and a potential for physical harm to a kit fox, should one be present within a construction site. Both the 2002 BO and the 2009 BO issued to UC Merced by the USFWS and the ITP issued by CDFW contain extensive requirements, including pre-construction surveys and compliance measures, that UC Merced must implement during construction of projects, including the proposed project, to avoid harm to kit fox. Compliance with the BO and ITP requirements would adequately avoid and minimize harm to kit fox. Furthermore, the loss of kit fox residence and dispersal habitat due to campus development, including the project site, is addressed in the 2020 LRDP SEIR and as noted in Section 4.2 of the SEIR, UC Merced has already compensated for the loss of residence and dispersal habitat for kit fox through the preservation of more than 25,918 acres of suitable habitat. Thus, potential project impacts on kit fox related to injury or mortality due to Field Education Center/Field Research Station construction activities and loss of residence and dispersal habitat are previously addressed and mitigated. Therefore, no new or substantially more severe impacts related to San Joaquin kit fox would occur that have not already been addressed in the 2020 LRDP SEIR, and no new mitigation would be required.

On the MVPGR, the vernal pool grassland provides potentially suitable habitat for San Joaquin kit fox; however, as noted above, this species has not been observed on the campus or the MVPGR during numerous preconstruction surveys of potential den sites and ongoing annual

camera monitoring on the MVPGR near artificial kit fox dens. Observational research and educational uses on the MVPGR would not result in potential injury or mortality to this species due to the limited duration (e.g., less than 2 hours for larger education groups) and type of activity (i.e., no ground disturbance). While some "active research" projects that include minor ground disturbing activities currently occur and would continue to occur on the MVPGR under the proposed project, these typically include installation of piezometers and soil moisture sensors, limited soil boring or soil collection, or other minimal disturbances that do not occur within wetlands/vernal pools, small mammal burrows or potential kit fox dens, or other sensitive environments. Research activities that result in more substantial ground disturbance would be subject to *2008 Management Plan* Guideline HE-1, which requires conducting pre-disturbance surveys by a qualified biologist for presence of special-status species, avoiding special-status species and their habitat (e.g., burrow complexes or potential den sites), and implementing erosion control measures. Furthermore, UC Merced would continue to conduct annual camera trap monitoring on the MVPGR and maintain existing artificial dens for San Joaquin kit fox, as required by the *2008 Management Plan*. If San Joaquin kit fox are identified on the MVPGR in the future, the University would maintain a map of sightings that would aid the University in directing research or educational uses away from sensitive areas (e.g., known or potential kit fox dens). The University would also continue to evaluate research and educational use locations in relation to the REU Zones and mapped sensitive areas to ensure that activities do not become overly concentrated in any one area, causing cumulative effects.

Therefore, with the implementation of applicable policies and guidelines, as specified in **Appendix A**, potential impacts on San Joaquin kit fox on the MVPGR due to increased research and educational uses would be less than significant. These policies and guidelines include: continued University-controlled access; University review for consistency with the *2008 Management P*lan, conservation easement, and other regulatory requirements; ongoing coordination with CDFW, the prospective easement holder; careful siting of activities within appropriate areas to avoid impacting San Joaquin kit fox or their habitat; application of access conditions and specialized monitoring needs (e.g., pre-disturbance surveys by a qualified biologist); and limiting certain educational uses on the MVPGR and/or assigning them to less sensitive areas on the MVPGR. Therefore, no new significant impacts to San Joaquin kit fox would occur due to the proposed project, and no new mitigation would be required.

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

The 10-acre Field Education Center/Field Research Station project site does not contain riparian habitat or other sensitive natural communities. The majority of the project site is considered non-native annual grassland. Thus, the project would have no impact on riparian habitat or other sensitive natural communities (there are 2.3 acres of swale wetlands and 0.03 acre of vernal pools located on the project site within the non-native annual grassland associated with the access improvement and vernal pool reconstruction areas; impacts on vernal pools are discussed under **Section 5.5.1.a** below). Therefore, no new or substantially more severe impacts would occur from

project construction that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

Riparian habitat on the MVPGR is restricted to Black Rascal Creek, located in the remote eastern portion of the MVPGR. Observational research and educational uses on the MVPGR would not result in adverse effects to riparian habitat due to its remote location on the MVPGR that would significantly limit the number of larger groups or classes that would access this area, as well as the limited duration (e.g., less than 2 hours for larger education groups) and type of activity (i.e., no ground disturbance). While some "active research" projects that include minor ground disturbing activities currently occur and would continue to occur on the MVPGR under the proposed project, these typically include installation of piezometers and soil moisture sensors, limited soil boring or soil collection, or other minimal disturbances that do not occur within wetlands/vernal pools, small mammal burrows, or other sensitive environments, including Black Rascal Creek and any associated riparian vegetation. Research activities that result in more substantial ground disturbance would be subject to *2008 Management Plan* Guideline HE-1, which requires conducting pre-disturbance surveys by a qualified biologist for presence of special-status species or sensitive habitat and implementing erosion control measures (reseeding/restoring disturbance areas). Furthermore, any potential research activities associated with Black Rascal Creek with the potential to substantially affect the bed, channel, or bank (e.g., habitat restoration) would require a streambed alteration notification to CDFW and adherence to conditions included in the streambed alteration agreement (e.g., preconstruction surveys for special-status species, biological monitoring, implementation of seasonal work restrictions and/or habitat protection measures such as silt fencing, site restoration, and/or compensatory mitigation). As part of the evaluation of any proposed research or educational uses associated with Black Rascal Creek, the University would ensure that all applicable regulatory/permit requirements are met, as documented in **Appendix A**. Therefore, for the reasons listed above, the impact on riparian habitat or other sensitive natural communities on the MVPGR as a result of increased research and educational uses would be less than significant. No new or significant impacts to riparian habitat or other sensitive natural communities on the MVPGR would occur, and no new mitigation would be required.

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

As described above, aquatic features were delineated throughout the campus site, including the project site, and verified by the U.S. Army Corps of Engineers (USACE) prior to the commencement of the development of the campus. Seasonal wetlands, including approximately 1.9 acres of canal wetlands, exist within the southern limits of the vernal pool reconstruction area along the northern bank of Le Grand Canal. There are also approximately 2.3 acres of swale wetlands and 0.03 acre of vernal pools located on the project site within the non-native annual grassland associated with the access improvement and vernal pool reconstruction areas.

As described in Section 4.2 of the 2020 LRDP SEIR, the impacts of campus development on State and federally protected wetlands were fully evaluated in the 2009 LRDP EIS/EIR, and all seasonal wetlands, which include the canal wetlands located on the project site, have been fully mitigated consistent with UC Merced's existing Section 404 and 401 permit requirements. Thus, although UC

Merced has filled less than half of the permitted wetlands acreage on the campus and University Community North sites, it has provided compensatory mitigation for all of the seasonal wetland acreage that is allowed to be filled under the permits from USACE and RWQCB. Therefore, no additional compensatory mitigation would be required for any impacts to the 1.9 acres of canal wetlands located on the project site, should those be filled or otherwise affected due to vernal pool reconstruction activities.

In regard to vernal pools, which include the approximately 2.33 acres of vernal pools and swales located on the project site, as stated in the 2020 LRDP SEIR, UC Merced has provided compensatory mitigation for 35.60 acres of fill (of the total permitted fill of 40.41 acres of vernal pools and swales), although only 25.83 acres of vernal pools and swales had been filled as of the 2020 LRDP SEIR. Based on an evaluation in September 2021 following the certification of the 2020 LRDP SEIR, 28.83 acres of vernal pools and swales have been filled within the permit area, leaving 6.77 acres of additional vernal pools/swales that could be filled without requiring additional compensatory mitigation. Thus, under the very conservative assumption that the access improvements and vernal pool reconstruction activities would impact all 2.33 acres of vernal pools/swales, the total fill within the permit area would still be within the 35.60 acres that were previously mitigated. Furthermore, as described in the 2020 LRDP SEIR, in the event that UC Merced fills all of the remaining vernal pool and swale wetlands such that the total fill equals the permitted fill of 40.41 acres, it would need to provide an additional 4.81 acres of compensatory vernal pool mitigation. UC Merced has discussed this with the USACE, and the USACE has agreed that this small acreage can be mitigated via the purchase of vernal pool credits under the Sacramento District California In-Lieu Fee Program. Thus, the project would have a less-than-significant impact on State or federally protected wetlands, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts on wetlands would occur from project construction that have not already been addressed in the 2020 LRDP SEIR, and no new mitigation would be required.

As described above, the MVPGR is dominated by annual grassland-vernal pool complex habitat, and the vernal pools, swales, pool/swale complexes, clay slope wetlands, and clay playas that exist on the MVPGR are regulated by the USACE and RWQCB. Increases in research and educational uses of the MVPGR as a result of the implementation of the proposed Field Education Center/Field Research Station has the potential to include ground disturbance in proximity to State and federally regulated wetlands. Indirect impacts to wetlands on the MVPGR could potentially occur due to increased research uses, resulting in increased dust and soil disturbance that could cause erosion and downstream water quality issues.

Consistent with the *2008 Management Plan*, the current protocols described in **Appendix A,** and as described above, access to the MVPGR is currently and would continue to be controlled by the University to avoid impacting protected wetlands. As part of the use evaluation process, the University also determines any necessary conditions and specialized monitoring needs, including pre-disturbance surveys conducted by a qualified biologist to identify and flag existing wetland features for avoidance, biological monitoring, and/or seasonal use activity restrictions to avoid and minimize indirect effects (e.g., during or immediately after rain events), consistent with current UC Merced practices. The University would continue to site research and educational use activities away from sensitive areas, such as wetlands, consistent with the prioritization of alternative sites

specified under the *2008 Management Plan*. The University would also continue to evaluate research and educational use locations to ensure that research projects do not become overly concentrated in any one area, causing cumulative effects.

As described above, most current and proposed research projects and educational uses would not involve any physical sampling or soil disturbance. When permitted, research and educational activities with minor ground disturbance (e.g., installation of piezometers or limited soil collection) are sited so they would not occur within wetlands/vernal pools. For potential research and educational uses that involve ground disturbance on the MVPGR, *2008 Management Plan* Guideline HE-1, Authorized Temporary Ground Disturbance, as referenced in **Appendix A**, requires conducting pre-disturbance surveys by a qualified biologist (e.g., to flag wetland boundaries), minimization of the disturbance area, topsoil salvage and replacement, and application of local annual grassland seed and/or certified weed-free mulch to avoid and minimize erosion. Typically, no large-scale manipulation of the ground is currently or would be allowed under the proposed project, although research projects that benefit the long-term survival or recovery of a species, such as restoration projects, may be allowed based on a review by the University and input from CDFW, the prospective easement holder, and other relevant regulatory agencies (e.g., USACE, RWQCB, USFWS). In this case, the University would ensure that all applicable regulatory requirements are met (e.g., Section 404 and 401 permits), if needed, as part of the evaluation of any proposed research or educational uses involving regulated wetlands, as documented in **Appendix A**. For the reasons stated above, this impact would be less than significant. Therefore, no new significant impacts to wetlands on the MPVGR would occur due to increased research and educational uses on the MVPGR, and no new mitigation would be required.

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

The project is located within the portion of the campus designated for future development as part of the 2020 LRDP, and impacts on wildlife movement resulting from campus buildout were fully evaluated in the 2009 LRDP EIS/EIR and incorporated into the 2020 LRDP SEIR by reference. The project site is located in the northern portion of the campus site and has been used for ongoing grazing activities. Grazing uses also occur within the adjacent MVPGR to the north and east and the Merced County Preserve property to the west. As described in **Section 3.0**, the Field Education Center and Research Station would consist of single-story, low-profile structures, designed to blend with the surroundings. The adjacent off-site conservation lands would remain undeveloped. Due to the small scale of the Field Education Center/Field Research Station development, the proposed project would not result in a new or more severe impact on wildlife movement than previously analyzed and disclosed in the 2009 LRDP EIS/EIR and 2020 LRDP SEIR, and any local wildlife movement would resume once construction of the Field Education Center/Field Research Station is complete. There are no wildlife nursery sites within or adjacent to the project area. Thus, the project would have a less-than-significant impact related to wildlife movement or nursery sites, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts to wildlife movement would occur due to project construction that have not already been addressed in the 2020 LRDP SEIR and 2009 LRDP EIS/EIR, and no new mitigation would be required.

Consistent with the conservation easements for the MVPGR, no permanent infrastructure, outside of what is described in the MVPGR Grazing Management Plan, is allowed on the MVPGR. Thus, physical barriers to local wildlife movement would not be introduced as a result of the proposed project. Observational research and educational uses on the MVPGR would also not substantially interfere with wildlife movement due to their limited duration, frequency, and type of activity (i.e., no ground disturbance). As described above and in **Appendix A**, any active research or educational uses would be reviewed by the University for their potential to affect special-status species or their habitat, as well as local wildlife movement, and activities would be located within less sensitive areas of the MVPGR. Additional access conditions and specialized monitoring needs (e.g., pre-disturbance surveys by a qualified biologist, staying on designated roads, consistency with *2008 Management Plan* Guideline HE-1, Authorized Temporary Ground Disturbance, etc.) would be applied as needed to minimize any temporary disturbance to wildlife movement and to ensure that the use of any potential native wildlife nursery sites (e.g., birds or bats) is not impeded. Thus, the increased research and educational uses on the MVPGR would not substantially interfere with wildlife movement, and this impact is less than significant. Therefore, no new significant impacts to wildlife movement or native wildlife nursery sites would occur due to increased research and educational uses on the MVPGR, and no new mitigation would be required.

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

The proposed project would not conflict with any local policies or ordinances protecting biological resources, as the project site is State-owned and therefore not subject to local regulations. Thus, the proposed Field Education Center/Field Research Station, including the continuation of research and educational uses on the MVPGR, would have no impact related to this criterion. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

No adopted habitat conservation plan or natural community conservation plan applies to the project site or the MVPGR. As described above, research and educational uses that would occur on the MVPGR would comply with the *2008 Management Plan* and conservation easement requirements. Thus, the project would have no impact related to this criterion. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

5.6 CULTURAL RESOURCES

Cultural Resources Would the Project…	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
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 formal cemeteries?	☐	☐	☒	☐

5.6.1 Impact Analysis

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

The previous cultural resources investigations conducted for the 2009 LRDP EIS/EIR, as referenced in the 2020 LRDP SEIR, identified nine historic resources within the boundary of the UC Merced campus and the University Community North. These resources were formally evaluated and recommended as not eligible for listing in either the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR), and the State Historic Preservation Officer concurred with the finding. Three of the nine historic resources are located within the project footprint: the Le Grand Canal, Historic Farm Complex (P-24-681), and Historic Fence Segment (P-24-1680). As discussed above, these resources were formally evaluated and recommended as not eligible for listing in either the NRHP or the CRHR, and the State Historic Preservation Officer concurred with the finding. As a result, the Initial Study prepared for the 2020 LRDP SEIR concluded that these three resources are not considered significant for the purposes of CEQA.

In 2019, the University removed the barn associated with the Historic Farm Complex following a storm in 2017 that cause the structure to collapse. An archaeological field survey was conducted[24] to ensure: (1) demolition efforts of the original campus barn did not expose any previously unidentified cultural constituents over which the barn had been built, and (2) the University would be able to construct new research facilities in its place without affecting cultural constituents. LSA conducted the field survey in July 2019 and did not identify any archaeological deposits or human remains in the survey area that may meet the definition of a historical resource (California Public

[24] LSA. 2019b. Archaeological Field Survey of UC Merced Barn Demolition Site, Merced County, California. Prepared for the University of California, Merced.

Resources Code [PRC] §21084.1) or a unique archaeological resource (PRC § 21083.2(g)) under CEQA.

Based on the results of the field survey, no historical resources were located on the project site pursuant to State CEQA Guidelines Section 15064.5. In the event that historical resources are discovered during Field Education Center/Field Research Station construction activities, the project would be required to implement **2020 LRDP Mitigation Measure CUL-2** (see **Section 6.4** of this Addendum), which addresses the treatment of unanticipated buried cultural resources. With implementation of this previously-adopted 2020 LRDP SEIR mitigation measure, currently undiscovered historical resources would be avoided, recorded, or otherwise treated appropriately, in accordance with pertinent laws and regulations, and impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR and 2009 LRDP EIS/EIR. Therefore, no new or substantially more severe impacts would occur from project construction that have not already been addressed in the 2020 LRDP SEIR and 2009 LRDP EIS/EIR, and no new mitigation would be required.

No extensive cultural resources surveys have been conducted on the MVPGR because no substantial actions have been proposed that would result in land disturbance. With regard to the potential for impacts to historical resources on the MVPGR due to increased research and educational uses following the construction of the Field Education Center/Field Research Station, UC Merced maintains an inventory of previously identified cultural resources on the MVPGR and would continue to implement guidelines for protecting cultural resources as specified in the *2008 Management Plan*. Section 5.8 of the *2008 Management Plan* includes the following management guidelines to protect cultural resources during implementation of ongoing resource management and research activities on the MVPGR.

- CR-1. Prevention of Vandalism of Cultural Resources. Protect cultural resources on site from vandalism through ongoing trespassing surveillance and enforcement and through monitoring of permitted uses.

- CR-2. Cultural Resources Inventory. The land managers will maintain a confidential record of any known sensitive archeological and historic resources and their locations. Managers will use this information to evaluate potential effects of proposed management, research, and educational activities and as a focus for law enforcement.

- CR-3. Records Search Requirements before New Ground Disturbance. Review the cultural resource inventory to identify potentially significant resources prior to approval of any ground disturbance associated with management activities or research.

- CR-4. Surveys and Evaluation prior to Ground Disturbance. Qualified cultural resource specialists will examine any previously disturbed sites proposed for ground disturbance in excess of 0.2 acre. Any archeological or historical resources will be recorded and evaluated using standard procedures.

- CR-5. Cultural Resources Protection during Ongoing Management Activities and Permitted Uses. Avoid disturbing significant cultural resources sites and sites of unknown significance from

ground disturbance during ongoing management activities (e.g., fuelbreak design, construction, and maintenance) and permitted uses.

- CR-6. Mitigation Requirements where Sites Cannot Be Avoided. If identified cultural resource sites cannot be avoided or if the boundaries of a site are unknown, consult a qualified archaeologist (including tribal experts designated by the tribe) for mitigation recommendations. Mitigation measures may include performing subsurface testing to determine the extent of a site, recovering data through research and excavation, or "capping" sites with a protective layer of material.

- CR-7. Procedures for Accidental Discoveries. Document existing procedures to be used if potentially significant cultural resources or human remains are discovered accidentally, and regularly review and update these procedures.

Consistent with the operating procedures outlined in **Appendix A**, the University would continue to control research and educational access to the MVPGR, review proposed uses for consistency with the *2008 Management* Plan, conservation easement, and other regulatory requirements, and locate activities within appropriate areas to avoid impacting sensitive cultural resources. Any potential ground disturbing research or educational uses would be carefully reviewed in accordance with the *2008 Management Plan* guidelines listed above, and all users must agree to the standard UCM NRS guidelines of entry, which include guidelines for unanticipated discoveries, including leaving any cultural resources undisturbed. As specified by the Cultural Resources Alert Sheet that is provided to all users of the MVPGR, if cultural resources are discovered, all activity must be halted within 25 feet of the discovery, the area shall be marked so it can be located again, and UCM PEPD shall be contacted in order to arrange for identification and evaluation by a qualified cultural resources specialist. All non-UC Merced groups are required to be accompanied by the UCM NRS staff or their trained UC delegate.

Therefore, this impact would be less than significant with the implementation of the existing MVPGR management guidelines and policies reflected above. No significant impacts to historical resources would occur as a result of increased research and educational uses on the MVPGR and no new mitigation would be required.

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

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

As described above, the project site was subject to an archaeological field survey to ensure demolition efforts of the original campus barn did not expose any previously unidentified cultural constituents over which the barn had been built. The July 19, 2019 field survey yielded no evidence

of archaeological resources in the project site pursuant to State CEQA Guidelines Section 15064.5. In the event that archaeological resources are discovered during project construction activities, the project would be required to implement **2020 LRDP Mitigation Measure CUL-2**.

With implementation of previously-adopted **2020 LRDP Mitigation Measure CUL-2,** the construction of the proposed Field Education Center/Field Research Station would not cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5, and impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur from project construction that have not already been addressed in the 2020 LRDP SEIR and 2009 EIS/EIR, and no new mitigation would be required.

As described above, consistent with the operating procedures outlined in **Appendix A**, the University would continue to control research and educational access to the MVPGR, review proposed uses for consistency with the *2008 Management* Plan, conservation easement, and other regulatory requirements, and locate activities within appropriate areas to avoid impacting sensitive cultural resources. Any potential ground disturbing research or educational uses would be carefully reviewed in accordance with the *2008 Management Plan* guidelines listed above, and all users must agree to the standard UCM NRS guidelines of access to the MPVGR, which include guidelines for unanticipated discoveries, including leaving any cultural resources undisturbed. All non-UC Merced groups are required to be accompanied by UCM NRS staff or their trained UC delegate.

Therefore, this impact would be less than significant with the implementation of the existing MVPGR management guidelines and policies reflected above. No significant impacts to archaeological resources would occur as a result of increased research and educational uses on the MVPGR, and no new mitigation would be required.

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

Impacts on human remains from the development of the UC Merced campus were evaluated in the 2009 LRDP EIS/EIR, as referenced in the 2020 LRDP SEIR. None of the areas of the campus (including the location of the project) evaluated under the 2020 LRDP SEIR were determined to have previously discovered human remains. The analysis concluded that the impacts from campus development on human remains (if discovered) would be reduced to a less-than-significant level with the implementation of **2020 LRDP Mitigation Measure CUL-3**. In the event that human remains are discovered during Field Education Center/Field Research Station construction activities, the project would be required to implement **2020 LRDP Mitigation Measure CUL-3**, which specifies procedures to appropriately collect and preserve human remains if encountered during construction activities. Therefore, impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR, no new or substantially more severe impacts would occur from project construction that have not already been addressed in the 2020 LRDP SEIR and 2009 EIS/EIR, and no new mitigation would be required.

As described above, consistent with the operating procedures outlined in **Appendix A**, all research and educational uses on the MVPGR must adhere to the standard UCM NRS guidelines of access to

the MVPGR, which include guidelines for unanticipated discoveries, including discovery of suspected human remains. As specified by the Cultural Resources Alert Sheet that is provided to all users of the MVPGR, if suspected human remains are discovered, all activity must be halted within 25 feet of the discovery, the area shall be marked so it can be located again, and UCM PEPD shall be contacted in order to arrange for identification and evaluation by a qualified cultural resources specialist.

Therefore, this impact would be less than significant with the implementation of the existing MVPGR management guidelines and policies reflected above. No significant impacts to undiscovered human remains would occur as a result of increased research and educational uses on the MVPGR, and no new mitigation would be required.

5.7 ENERGY

Energy Would the Project…	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☒	☐	☐	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☒	☐	☐	☐

5.7.1 Impact Analysis

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

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

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

As discussed in **Section 2.1.1** of this Addendum, the proposed Field Education Center/Field Research Station is consistent with the land uses and intensities of development identified in the 2020 LRDP and the project is within the scope of activities covered in the environmental impact evaluation in the 2020 LRDP SEIR. In addition, the proposed project would result in a nominal increase in campus

population (two employees), and the increase in building space attributable to the proposed project is within the growth projections of the 2020 LRDP. Furthermore, the construction of the proposed building would comply with CALGreen, which would also result in the use of sustainable materials and recycled content during construction and the sourcing of products from nearby sources to the extent feasible. The project would also be required to comply with the California Air Resources Board's (CARB) adopted Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other TACs. Finally, the proposed project would be designed to comply with the University of California Sustainable Practices Policy (Sustainability Policy), which contains policies for green building design, clean energy, climate protection, and zero waste. As such, project construction would not increase the consumption of energy resources beyond what was evaluated in the 2020 LRDP SEIR. Impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR, no new or substantially more severe construction energy impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

Operation. As described in the 2020 LRDP SEIR, campus operation under the 2020 LRDP would result in a net new demand of approximately 211 therms of natural gas per year and a net new electricity demand of 7.8 megawatts per year (MW/yr). Title 24 represents the State policy on building energy efficiency. The goals of the Title 24 standards are to improve energy efficiency of residential and non-residential buildings, minimize impacts during peak energy-usage periods, and reduce impacts on State energy needs. The Sustainability Policy requires buildings to exceed Title 24 by 20 percent or meet energy performance targets. At UC Merced, a more ambitious goal of outperforming Title 24 energy efficiency standards by 30 percent has been set. Current campus buildings, which employ an array of design and technological strategies to minimize and manage campus energy consumption, are using approximately 50 percent less energy than Title 24 standards.

Additional automobile use under the 2020 LRDP, which accounts for the increase in vehicle use associated with the proposed project, would result in the consumption of approximately 785,340 gallons of gasoline and 447,340 gallons of diesel related to vehicular travel. As described in **Section 5.9**, Greenhouse Gas (GHG) Emissions, of this Addendum, the 2020 LRDP found that the per capita emissions of GHGs under the 2020 LRDP from all energy use, including the proposed project, including petroleum-based fuel use, would not exceed the per capita GHG threshold. Although the total emissions from all energy use would exceed the total GHG emissions threshold, GHG emissions would be reduced to a less-than-significant level with the mitigation specified in **Section 5.9.1**.

The proposed project would result in a nominal increase in campus population (two employees), and the increase in building space attributable to the proposed project is within the growth projections of the 2020 LRDP. Therefore, the project emissions would remain below the established thresholds and the use of energy by the campus under the 2020 LRDP would not be wasteful or inefficient. Thus, energy use associated with the project would not be inefficient, wasteful, and unnecessary, nor would the increased energy use associated with the project conflict with a State or local plan for renewable energy or energy efficiency. Impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR, no new or substantially more severe operational

energy impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

5.8 GEOLOGY AND SOILS

Geology and Soils Would the Project…	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
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 wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☒	☐	☐
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☒	☐	☐	☐

5.8.1 Impact Analysis

a. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

The UC Merced campus, which includes the project site, is not located on, adjacent to, or near an Alquist-Priolo Earthquake Fault Zone.[25] According to the 2020 LRDP SEIR, there are no active faults on or adjacent to UC Merced or the project site that could result in a significant seismic hazard. The nearest active fault is in the western portion of Merced County, at a distance from the project site such that seismic activity along that fault would not be expected to cause rupture or other adverse impacts at the project site. The Foothills fault system is approximately 15 miles northeast of the project site, but this system is not considered to be active.

As there are no active fault systems that could affect the UC Merced campus, the 2020 LRDP SEIR concluded that construction of campus facilities, such as the proposed project, would not expose people or structures to a significant level of risk from fault rupture. In addition, the project would be constructed to comply with the California Building Code. Impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR**.** Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

ii. Strong seismic ground shaking?

The project site is located in a region of the State that is characterized by a low level of seismic activity and, as such, the ground-shaking hazard in the area is considered to be low. However, the 2020 LRDP SEIR concluded that the construction of buildings on the campus, such as the proposed Field Education Center/Field Research Station, could still result in the exposure of people or structures to excessive risk from ground shaking. As such, **2020 LRDP Mitigation Measure GEO-2** (see **Section 6.5** of this Addendum) would be implemented as part of all building projects proposed on the campus, including the proposed project. This mitigation measure requires the preparation of a project-specific geotechnical investigation report and implementation of report recommendations. Project impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR**.** Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

iii. Seismic-related ground failure, including liquefaction?

Although liquefaction can occur in the Central Valley, there are no areas on or adjacent to the UC Merced campus or the project site that are at a significant risk of such seismically induced events. As

[25] United States Geologic Survey, Earthquake Hazards Program, Alquist-Priolo Faults, https://earthquake.usgs.gov/education/geologicmaps/apfaults.php. Accessed May 6, 2022.

discussed in Section 4.4.2.1 of the 2009 LRDP EIS/EIR, the LRDP area is underlain by a hardpan layer of soil within 3 feet of the surface, serving to significantly reduce liquefaction hazards. Based on the depth of the hardpan, the 2020 LRDP SEIR concluded that construction of buildings on the campus (such as the proposed project) could still pose a risk to public safety and property by exposing people, property, and infrastructure to potentially adverse effects including seismic-related ground failure and liquefaction. As with all building projects on the campus, the proposed project would implement **2020 LRDP Mitigation Measure GEO-2,** which requires the preparation of the project-specific geotechnical investigation report and implementation of report recommendations to reduce potential impacts from liquefaction and seismic-related ground failure. Project impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR and 2009 LRDP EIS/EIR, and no additional mitigation would be required.

iv. Landslides?

The UC Merced campus, including the project site, is located on and surrounded by relatively flat topography. Foothills of the Sierra Nevada Mountain Range are located 9.5 miles to the east of the project site. The 2020 LRDP SEIR concluded that construction of on-campus buildings, such as the proposed project, could still be subject to hazards related to seismically-included landslides or landslide runout. As with all building projects on the campus, the proposed project would implement **2020 LRDP Mitigation Measure GEO-2,** which requires the preparation of the project-specific geotechnical investigation report and implementation of report recommendations to reduce potential impacts from seismic related landslides. Project impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

The 2020 LRDP SEIR concluded that construction of new buildings on the campus, such as the proposed project, would not result in substantial erosion or the loss of topsoil from grading activities. As the proposed project would disturb an area greater than 1 acre in size, the project would be subject to National Pollutant Discharge Elimination System (NPDES) storm water regulations, and would be required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) during construction. The objectives of the SWPPP are to (1) identify pollutant sources that may affect the quality of stormwater associated with construction activity and (2) identify, construct, and implement stormwater pollution prevention measures to reduce pollutants in stormwater discharges during and after construction. The SWPPP is required to include a description of potential pollutants and the manner in which sediments and hazardous materials present on site during construction (including vehicle and equipment fuels) would be managed. The SWPPP must also include details of how the sediment and erosion control best management practices (BMPs) would be implemented. Compliance with NPDES regulation for control of pollutant discharge during construction would reduce the potential for significant soil erosion or sedimentation due to construction of the proposed Field Education Center/Field Research Station and associated infrastructure. Impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR**.** Therefore, no new or substantially more severe impacts would occur that have not already

been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required. For control of erosion from operation of campus facilities, please see **Section 5.11**, Hydrology and Water Quality, of this Addendum.

For potential research and educational uses that involve ground disturbance on the MVPGR, *2008 Management Plan* Guideline HE-1, Authorized Temporary Ground Disturbance, as referenced in **Appendix A**, requires minimization of the disturbance area, topsoil salvage and replacement, and application of local annual grassland seed and/or certified weed-free mulch to avoid and minimize erosion. Typically, no large-scale manipulation of the ground is currently or would be allowed under the proposed project, although research projects that benefit the long-term survival or recovery of a species such as restoration projects may be allowed. In this case, any authorized uses involving more than 1 acre of ground disturbance would also be required to comply with NPDES storm water regulations as described above. Therefore, this impact would be less than significant, and no new or substantially more severe impacts as a result of increased research and educational uses on the MVPGR would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

The project site is generally level and was previously developed with a barn and other farm structures. The site is not located on a geologic unit or soil that could be unstable or could become unstable with project construction. Issues related to seismically induced and non-seismic related landslide hazards are discussed above in **Section 5.8.1.a (iv)**. Issues related to liquefaction and related hazards are discussed above in **Section 5.8.1.a (iii)**. Issues related to soil properties are discussed below in **Section 5.8.1.d. 2020 LRDP Mitigation Measure GEO-2** would be implemented to reduce such geologic impacts from occurring during project construction. Project impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Websoil survey, the project site is underlain by *Hopeton clay, 0 to 8 percent slopes; Corning gravelly loam, 0 to 8 percent slopes; Raynor cobbly clay, 0 to 3 percent slopes; Redding gravelly loam, 0 to 8 percent slopes, dry; and Water* soil types.[26] The soils present on the project site have a moderate to high shrink-swell potential (i.e., soil expansiveness). Shrinking (when dry) and swelling (when wet) of these soils can result in differential ground movement. If structures, such as the proposed Field Education Center/Field Research Station, are constructed in areas with expansive and/or weak soils, structural damage could occur. As a result, the 2020 LRDP SEIR concluded that

[26] United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) Websoil Survey. Website: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm (accessed May 6, 2022).

expansive soils could cause a risk for post-construction heave and cracking of concrete slabs, as well as lightly loaded foundations and pavements. The proposed project would implement **2020 LRDP Mitigation Measure GEO-2** to ensure that construction of the project is completed in a manner that avoids and reduces the potential for damage associated with expansive soils. Project impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Visitor use of the Field Education Center/Field Research Station would result in the generation of wastewater. As stated in **Sections 3.4.1** and **3.4.2**, grey water would be reused. To treat wastewater from restrooms, a composting toilet system would be installed on site. The composting toilet systems are fully contained and are not affected by the properties of the underlying soils. No septic tanks are proposed. There would be no impact related to septic systems and no new mitigation would be required.

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

Impacts to paleontological resources from the development of the UC Merced campus, including the area where the project would be developed, were evaluated in the 2009 LRDP EIS/EIR, as referenced in the 2020 LRDP SEIR, and were found to be potentially significant. The analysis concluded that the impacts from campus development would be reduced to a less-than-significant level with the implementation of **2020 LRDP Mitigation Measures CUL-4a** and **CUL-4b** (see **Section 6.4** of this Addendum). The project site is located on the following geologic units: QTnm – North Merced Gravels, and TI – Laguna Formation.[27] The QTnm – North Merced Gravels geologic unit is Late Pliocene to Early Pleistocene in age and has been identified as potentially fossiliferous. During the course of project construction activities, if paleontological resources are uncovered, the project would be required to implement **2020 LRDP Mitigation Measure CUL-4a.** Additionally, because the project site is located on a geologic unit that has been identified as potentially fossiliferous, implementation of **2020 LRDP Mitigation Measure CUL-4b** would be required, which entails intermittent inspection by a qualified paleontologist during the construction period. These measures would ensure that if any previously undiscovered paleontological resources are found during project construction, the resources would be collected and properly curated as warranted.

With implementation of **2020 LRDP Mitigation Measures CUL-4a** and **CUL-4b,** the proposed project would not directly or indirectly destroy a unique paleontological resource. Impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or

[27] University of California, Merced. 2009. *UC Merced and University Community Project Environmental Impact Statement/Environmental Impact Report, Figure 4.6-1*. March.

substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR and 2009 LRDP EIS/EIR, and no additional mitigation would be required.

5.9 GREENHOUSE GAS EMISSIONS

Greenhouse Gas Emissions Would the Project…	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
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?	☒	☐	☐	☐

5.9.1 Impact Analysis

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

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

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

- Carbon dioxide (CO_2);
- Methane (CH_4);
- Nitrous oxide (N_2O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulfur Hexafluoride (SF_6).

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, believed to be causing global warming. While some of the manmade GHGs such as CO_2, CH_4, and N_2O also occur naturally, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere.

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

atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e).

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

Construction GHG Emissions. As discussed in the 2020 LRDP SEIR, GHG emissions associated with construction activities would occur throughout the timeframe of the 2020 LRDP from January 2021 to December 2030. Construction activities would include site preparation, grading, building construction, pavement and asphalt installation, landscaping and hardscaping, and architectural coatings. The 2020 LRDP SEIR found that approximately 6,118 metric tons of CO_2e would be emitted during the approximately 10-year construction period, which is about 612 metric tons of CO_2e per year. The 2020 LRDP SEIR found that construction GHG emissions would result in a less-than-significant impact.

Similar to buildout of the LRDP, construction activities associated with the proposed project would produce combustion emissions from various sources. Construction of the Field Education Center/Field Research Station would emit GHGs through the operation of construction equipment and from builder supply vendor vehicles. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, the fueling of heavy equipment emits CH_4. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

The proposed project would result in a nominal increase (two employees) in campus population, and the increase in building space attributable to the proposed project is within the growth projections of the 2020 LRDP. Therefore, construction GHG emissions associated with the proposed project are accounted for in the estimated annual construction emissions evaluated in the 2020 LRDP SEIR. As such, construction-phase GHG emissions associated with the proposed project are accounted for in the estimated annual construction emissions reported above. No new or substantially more severe construction GHG impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

Operational GHG Emissions. As discussed in the 2020 LRDP SEIR, implementation of the 2020 LRDP would contribute to long-term cumulative increases in GHG emissions as a result of additional buildings and people on the campus. Sources of new emissions would include building heating, cooling and lighting systems, water use, wastewater generation, and solid waste generation, as well as increases in traffic to the campus. The campus does not, and would not as part of the implementation of the 2020 LRDP, emit industrial gases. Thus, the campus would generate little in

the way of GHGs other than CO_2. While certain research activities on the campus may involve the emission of other GHGs, these activities typically result in minimal GHG emissions.

The 2020 LRDP SEIR evaluated GHG impacts based on emissions reduction goals set forth in Assembly Bill (AB) 32 and Senate Bill (SB) 32. According to AB 32 and SB 32, the State's 2020 emissions must be reduced to 1990 emissions levels, and by 2030 to be 40 percent below 1990 emissions, respectively. Using UC Merced's 2005 GHG emissions as baseline, and reduction targets from the State laws, two campus-specific thresholds were developed: the first one involving a total emissions threshold, and the second one involving an efficiency threshold based on per capita emissions. The 2020 LRDP SEIR used a total emissions threshold of 3,300 metric tons of CO_2e per year and a per capita threshold of 2.44 metric tons of CO_2e per capita per year in 2030, which, if exceeded, would represent a significant impact.

The 2020 LRDP SEIR found that the campus' per capita emissions of 0.63 metric tons of CO_2e per capita per year in 2030 would be well below the UC Merced 2030 per capita target of 2.44 metric tons of CO_2e per capita per year. However, the 2020 LRDP SEIR found that the campus' total emissions of 10,137 metric tons of CO_2e in 2030 would exceed the threshold of 3,300 metric tons of CO_2e per year. As such, the 2020 LRDP SEIR found that implementation of the 2020 LRDP would result in a potentially significant impact. The 2020 LRDP SEIR identified **2020 LRDP Mitigation Measures GHG-1a, GHG-1b,** and **GHG-1c** to reduce this impact to a less-than-significant level.

Similar to the impacts identified in the 2020 LRDP SEIR, long-term operation of the proposed project would generate GHG emissions from area, mobile, waste, and water sources, as well as indirect emissions from sources associated with energy consumption. Mobile-source GHG emissions would include project-generated vehicle trips associated with trips to the proposed project. Area-source emissions would be associated with activities such as landscaping and maintenance equipment on the project site and other sources. Waste-source emissions generated by the proposed project include emissions generated by landfilling and other methods of disposal related to transporting and managing project-generated waste.

As identified above, the proposed project would result in a nominal increase (two employees) in campus population. Both the population increase and the small increase in building space attributable to the proposed project are within the growth projections of the 2020 LRDP SEIR analyses; therefore, the operational GHG emissions that would result due to the proposed project are included in the estimated emissions reported and evaluated in the 2020 LRDP SEIR. UC Merced would continue to implement **2020 LRDP Mitigation Measures GHG-1a, GHG-1b,** and **GHG-1c**, which would include measures to reduce campuswide GHG emissions and reduce emissions from vehicles and from area and energy sources. With implementation of **2020 LRDP Mitigation Measure GHG-1b**, project impacts would be less than significant consistent with the analysis in the 2020 LRDP SEIR, no new or substantially more severe operational GHG impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

As discussed in the 2020 LRDP SEIR, AB 32 (the Global Warming Solutions Act of 2006) established the goal for the reduction of California's GHG emissions to 1990 levels by 2020. In 2015 and 2016, SB 350 (Clean Energy and Pollution Reduction Act) and SB 32 (California Global Warming Solutions Act of 2006) were signed into law, establishing the State's mid-term target for 2030 emissions to be 40 percent below the 1990 emissions. As discussed in **Section 5.9.1.a** above, with the implementation of the 2020 LRDP, on a per capita basis, the campus would emit 0.63 metric tons per capita in 2030, which is below the campus-specific threshold of 2.44 metric tons per capita per year derived for the campus for compliance with SB 32. Furthermore, UC Merced would implement **2020 LRDP Mitigation Measures GHG-1a, GHG-1b,** and **GHG-1c** to reduce its total emissions such that they remain below 3,300 metric tons of CO_2e per year, a target emissions level that is 40 percent less than the campus' 2020 emissions target. Therefore, with mitigation, campus development under the 2020 LRDP would not conflict with the State laws and regulations related to GHG emissions.

In addition, as discussed in the 2020 LRDP SEIR, the 2020 LRDP is a projected development program for the Merced campus for the years 2020 through 2030. Under the plan, the campus is anticipated to add about 1.83 million square feet of building space by 2030. The campus population is projected to increase by 5,300 persons to a total of about 17,400 persons by 2030. The addition of building space would increase the use of energy on the campus and the additional population would result in more persons commuting to the campus. Increased on-campus population would also increase water use, wastewater generation and solid waste generation. All of these changes would have the potential to increase the campus' GHG emissions. However, campus development under the 2020 LRDP would be compliant with the UC Sustainability Policy, UC Merced Sustainability Strategic Plan, and the UC Merced CAP. Campus projects under the 2020 LRDP would achieve a minimum of a Silver rating under the LEED Green Building Rating System. It was determined that, with implementation of **2020 LRDP Mitigation Measures GHG-1a, GHG-1b,** and **GHG-1c**, the 2020 LRDP would not conflict with the UC Sustainability Policy or the UC Merced plans adopted to reduce GHG emissions.

The proposed project would include the development of a field education center and field research station. The proposed project would result in a nominal increase (two employees) in campus population. This increase and the increase in building space attributable to the proposed project are within the growth projections of the 2020 LRDP SEIR analyses. Further, UC Merced would continue to implement **2020 LRDP Mitigation Measures GHG-1a, GHG-1b,** and **GHG-1c** to ensure operational GHG emissions from campus development under the 2020 LRDP remain less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, the proposed project would not conflict with applicable plan, policy, or regulations pertaining to GHGs. With implementation of **2020 LRDP Mitigation Measure GHG-1b**, no new or substantially more severe impacts related to GHG emissions would occur from project implementation that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

5.10 HAZARDS AND HAZARDOUS MATERIALS

Hazards and Hazardous Materials Would the Project…	**Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR**	**Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR**		
		No Impact	**Less than Significant Impact**	**Potentially Significant Impact**
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 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☒	☐	☐	☐
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?	☒	☐	☐	☐

5.10.1 Impact Analysis

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

Routine transport, use, and disposal of hazardous materials would be associated with the construction and operation of the proposed Field Education Center/Field Research Station, similar to other existing academic buildings and new facilities developed on the UC Merced campus under the 2020 LRDP. Similar to existing conditions, hazardous materials in the form of fuels, paints, etc., would be used during project construction; once the project is constructed, some hazardous

materials use such as the use of cleaning and maintenance supplies would be associated with the operation of the building.

The use of hazardous chemicals in varying amounts during construction of the proposed building would be subject to hazard control. Building construction activities are required to comply with all applicable environmental, health and safety compliance regulations including, but not limited to, Titles 8 and 22 of the California Code of Regulations, Uniform Fire Code, and Division 20 of the California Health and Safety Code. The transport and unloading of hazardous materials to and from the project site during construction activities would comply with United States Department of Transportation (DOT) and California Department of Transportation (Caltrans) regulations.

Consistent with the 2020 LRDP SEIR, the Campus' compliance with all State, federal, and local hazardous materials regulations would reduce any construction, operational, and maintenance-related hazardous materials impacts to a less-than-significant level. The proposed project would also comply with all State, federal, and local hazardous materials regulations as described above. Therefore, impacts related to the routine transport, use, or disposal of hazardous materials resulting from the proposed project would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

As discussed above under **Section 5.10.1.a**, the transport of hazardous materials during project construction and operation would be conducted in accordance with all applicable State and federal laws. The transport of any hazardous materials to the campus would be conducted in accordance with the Hazardous Materials Transportation Act (49 U.S. Code 5101 et seq.) and other State and federal requirements.

Due to the relatively small amounts of hazardous materials involved and compliance with applicable transport regulations, the proposed project would not create any new or substantially more severe hazards 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, consistent with the analysis in the 2020 LRDP SEIR**.** Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

As stated in the Initial Study prepared as part of the 2020 LRDP SEIR, there are no existing K-12 schools within one-quarter mile of the UC Merced campus, which includes the project site, and no new schools have been built or planned within one-quarter mile of the campus since publication of the 2020 LRDP SEIR. Furthermore, the project would not involve equipment or activities that would emit hazardous emissions or involve the handling of hazardous or acutely hazardous materials,

substances, or waste within one-quarter mile of an existing or proposed school. No impact would occur, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

Historical agricultural uses of the campus lands have included grazing and irrigated pasture and have not involved the use of fertilizers or pesticides. Impacts related to hazardous materials sites were evaluated in the 2020 LRDP SEIR and were found to be potentially significant. The analysis concluded that the impacts from unknown hazardous materials sites would be reduced to a less-than-significant level with adherence to Campus policies and implementation of **2020 LRDP Mitigation Measure HAZ-4** (see **Section 6.7** of this Addendum). The project site has been disturbed by previous grazing/agricultural activities; however, no hazardous materials sites have been found within the footprint of the project area. According to the California Department of Toxic Substance Control EnviroStor website there are no known hazardous waste sites located within 1,000 feet of the project site.[28] The project would also implement **2020 LRDP Mitigation Measure HAZ-4**, which would require that work cease, and measures be implemented in the event hazardous materials sites are revealed during construction activities associated with the project. Impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR**.** Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

As stated in the 2020 LRDP SEIR Initial Study, the UC Merced campus and the project site are not located within an airport land use plan or within 2 miles of a public use airport. The Merced-Castle Airport is located approximately 7.5 miles west of the project site. Consistent with the analysis in the 2020 LRDP SEIR, no impact would occur as a result of the proposed project. No new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

As stated in the 2020 LRDP SEIR Initial Study, UC Merced has adopted both an Emergency Operations Plan and a Crisis Communications Plan by which the project would abide. The Campus emergency response team is trained and equipped to respond to hazardous materials emergencies. In addition, UC Merced would prepare (or update) safety planning documents in accordance with

[28] California Department of Toxic Substances, EnviroStor Website, https://www.envirostor.dtsc.ca.gov/public/ (Accessed May 9, 2022).

California Health and Safety Code Section 25517.5, as well as applicable laws, regulations, and Campus policies in association with the project. As described in the 2020 LRDP SEIR Initial Study, the Campus would implement safety training programs upon occupying the proposed Field Education Center/Field Research Station to ensure efficient implementation of any emergency response plan. The Campus would develop a plan detailing procedures for proposed Field Education Center/Field Research Station occupants to follow in the event of various emergencies and evacuations. The proposed Field Education Center/Field Research Station would be assigned a building safety coordinator who would address emergency planning and safety training for the occupants, employees, staff, and students occupying the project. In addition, the UC Merced Police Department would make the necessary contact with staff in the event of a minor spill or release at the proposed Field Education Center/Field Research Station. The 2020 LRDP SEIR Initial Study concluded that development of the campus would not impair implementation of physically interfere with any emergency response plan or emergency evacuation plan, and per the 2020 LRDP SEIR Initial Study, the impact would be less than significant. The proposed project would similarly adhere to these requirements, and, consistent with the analysis in the 2020 LRDP SEIR, impacts would be less than significant. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

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

The UC Merced campus would use the *2008 Management Plan* as a guide to balance fire prevention and suppression methods with protection of natural resources and biodiversity. The *2008 Management Plan* has four distinct goals regarding fire protection and management that would be applicable to the project: (1) develop fire protection that emphasizes public safety and protection of university properties, especially in the interface areas; (2) prevent a substantial increase in fire frequency from “pre-university” (i.e., before development of the campus) conditions to maintain the natural habitat; (3) minimize ground-disturbing fire prevention and suppression methods (e.g., fuel breaks); and (4) use prescribed fire as a management tool to control invasive weeds that threaten biodiversity. Additionally, the project site would maintain a 50-foot setback from the MVPGR lands. The 2020 LRDP SEIR Initial Study concluded that with the implementation of the fire prevention measures described above and adherence to the guidelines of the *2008 Management Plan* for the adjacent conservation lands, impacts related to wildland fires resulting from development under the

2020 LRDP would be less than significant. The proposed project would also adhere to these measures and guidelines, and would not result in an increase in student or employee population beyond the population growth projected under the 2020 LRDP. Consistent with the analysis in the 2020 LRDP SEIR, impacts resulting from the proposed project would be less than significant. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

5.11 HYDROLOGY AND WATER QUALITY

Hydrology and Water Quality Would the Project…	**Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR**	**Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR**		
		No Impact	**Less than Significant Impact**	**Potentially Significant Impact**
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater 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?	☒	☐	☐	☐

5.11.1 Impact Analysis

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

As described in the 2020 LRDP SEIR, impacts on water quality from the development of the UC Merced campus and University Community North were evaluated in the 2009 LRDP EIS/EIR and were found to be less than significant. Construction activities under the 2020 LRDP, which account for the proposed Field Education Center/Field Research Station, could result in soil erosion and release of sediment into receiving waters. Spills or leaks from heavy equipment and machinery

(petroleum products and other heavy metals) in staging areas and building sites could also adversely affect receiving water quality.

However, according to federal law, all construction projects that involve disturbance of more than 1 acre of land (or disturb less than 1 acre but are part of a larger project that in total disturbs more than 1 acre) are subject to NPDES regulations for storm water. All such projects are required by law to obtain coverage pursuant to SWRCB's NPDES permit Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities (Order 2009-009-DWQ, NPDES No. CAS000002, as amended by Orders No. 2010-0014-DWQ and 2012-0006-DWQ) (Construction General Permit) and prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) during construction. The SWPPP must be kept on site during construction activity and made available upon request to representatives of the Regional Water Quality Control Board (RWQCB). The SWPPP is required to include a description of potential pollutants and the manner in which sediments and hazardous materials present on site during construction (including vehicle and equipment fuels) would be managed. The SWPPP must also include details of how the sediment and erosion control best management practices (BMPs) would be implemented. Adherence to NPDES regulations would help to ensure that adverse impacts on water quality during project construction are minimized and avoided.

The 2020 LRDP SEIR concluded that wastewater generated on the campus under the 2020 LRDP would be similar to wastewater discharged from other parts of the City and would not contain constituents in concentrations that could cause the City's wastewater treatment plant (WWTP) to exceed the waste discharge requirements that apply to the discharge of treated effluent. The proposed project would not involve the use of or disposal of hazardous chemicals. Furthermore, grey water from the project would be collected and reused on site and wastewater would be treated in a composting system. The proposed project would not discharge into the campus sanitary sewer system.

Therefore, the potential for the Field Education Center/Field Research Station facilities to violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality would represent a less-than-significant impact, consistent with the analysis in the 2020 LRDP SEIR. The proposed project would not result in a new or more severe impact than what was previously analyzed and disclosed in the 2020 LRDP SEIR and 2009 LRDP EIS/EIR, and no new mitigation would be required.

For potential research and educational uses that involve ground disturbance on the MPVGR, *2008 Management Plan* Guideline HE-1, Authorized Temporary Ground Disturbance, as referenced in **Appendix A**, requires minimization of the disturbance area, topsoil salvage and replacement, and application of local annual grassland seed and/or certified weed-free mulch to avoid and minimize erosion. Typically, no large-scale manipulation of the ground is currently or would be allowed under the proposed project, although research projects that benefit the long-term survival or recovery of a species such as restoration projects may be allowed. In this case, any authorized uses involving more than 1 acre of ground disturbance would also be required to comply with NPDES storm water regulations as described above. Therefore, this impact would be less than significant. No new significant impacts as a result of increased research and educational uses on the MVPGR would occur, and no new mitigation would be required.

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

Groundwater Recharge. Impacts on groundwater supplies from the development of the 1,026-acre campus were evaluated in the 2020 LRDP SEIR and determined to be less than significant. As described in Section 4.4 of the 2020 LRDP SEIR, the development of additional impervious surfaces on the campus such as new buildings, roads, paths and parking lots, would normally have the potential to reduce recharge of the underlying aquifer. However, campus development under the 2020 LRDP, which includes the project, would not substantially reduce recharge compared to existing conditions for a number of reasons. The campus is located in an area that is known to have soil types with low to moderate recharge potential. There are substantial amounts of clay in the campus site soils, which restrict the ability of surface water to percolate into the groundwater aquifer. Also, a clay hard pan exists near the ground surface that further inhibits the potential of surface water to infiltrate down to the groundwater aquifer. Therefore, groundwater recharge under pre-development conditions is generally low on the campus site. Further, the Campus's Water Action Plan sets forth a number of near- and long-term actions that would be reflected in the project design, including: (1) incorporation of green infrastructure and low-impact development strategies into site design, and (2) capture and on-site reuse of storm water under normal precipitation conditions. Therefore, consistent with the analysis in the 2020 LRDP SEIR, implementation of the proposed project would not substantially interfere with recharge such that aquifer volume would be affected, and the impact related to groundwater recharge would be less than significant. The project would not result in new or substantially more severe impacts than those evaluated in the 2020 LRDP SEIR, and no new mitigation would be required.

Groundwater Supplies. The proposed project would increase demand for potable water, which would be drawn from the Merced Subbasin using the existing well on the project site. The subbasin is currently in a condition of overdraft. The 2020 LRDP SEIR evaluated the impact of campus development under the 2020 LRDP for its potential to decrease groundwater supplies. As described in the 2020 LRDP SEIR, based on a water use factor of 31.4 gallons per capita per day (gpcd) and the 2030 population projections for the campus, projected water demand for the campus was conservatively estimated to be approximately 612 acre-feet per year (AFY) by 2030. This estimate is considered conservative because it does not take into account further reductions in campus water use due to UC Merced's implementation of its Water Action Plan in compliance with the UC Sustainable Practices Policy. Furthermore, the estimated campus water demand is approximately 56 percent lower than the City of Merced's 2015 Urban Water Management Plan (UWMP) 2030 estimate for the campus of 1,406 AFY. The 2015 UWMP[29] also concluded that the City has an adequate groundwater supply to meet water demands during normal, single-dry, and multi-dry years. Therefore, although the implementation of the 2020 LRDP would increase the amount of groundwater that would be withdrawn from the Merced Subbasin compared to existing conditions,

[29] In August 2021, the City of Merced adopted the City's 2020 Urban Water Management Plan. That plan included the projected campus population growth under the 2020 LRDP and the associated increase in water demand at the campus. Similar to the 2015 UWMP, the 2020 UWMP also concluded that the City of Merced has an adequate water supply to meet water demands in its service area through 2040, including the UC Merced water demand under the 2020 LRDP, during normal, single dry, and multi-dry years.

the amount is substantially less than the amount accounted for UC Merced in the City's UWMP. The 2020 LRDP SEIR also determined that the small-scale projects on ROS lands, as the project would be, would be unlikely to substantially decrease groundwater supplies.

The proposed Field Education Center/Field Research Station would not substantially increase the usage of potable water on the campus compared to existing conditions, because the project would not increase the campus's student population and would result in a nominal increase in employee population (two employees). This small increase in employee population is within the campus population projected under the 2020 LRDP. While the proposed project would also result in an increase in visitors to the campus, the number of daily visitors would not be large due to the nature of the research and educational programs that the project would support. As shown in **Table A**, most of the time, small groups would use the Field Education Center/Field Research Station. Further, the proposed project includes features such as grey water and storm water reuse to minimize the use of potable water. Therefore, the proposed project would not substantially increase the demand for potable water or require extraction of groundwater in excess of what was previously analyzed in the 2020 LRDP SEIR, and would result in a less-than-significant impact related to groundwater supplies. Therefore, no new or substantially more severe impacts to groundwater would occur, and no additional mitigation would be required.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site;
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
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?

The 2020 LRDP SEIR analyzed the changes in drainage patterns as a result of campus development under the 2020 LRDP. The analysis concluded that the impacts from 2020 LRDP campus development would be less than significant. The 2020 LRDP SEIR also determined that the small-scale projects on ROS lands, as the project would be, would be unlikely to substantially alter drainage patterns.

The project would increase the impervious surface area at the project site and result in a small increase in runoff from the project site. However, stormwater runoff from the building rooftops and paved areas on the project site would be captured and stored in an on-site tank or a surface pond and used for irrigation, fire suppression, and recharge. Storm water would not be discharged off site, and therefore, there would be no increase in erosion or siltation, flooding or any other effects off site. Therefore, no new or substantially more severe impacts associated with the addition of impervious surfaces as a result of the proposed project would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

As described in the 2020 LRDP SEIR, the campus, including the project site, is not within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map. In addition, Lake Yosemite, which is located approximately 0.5 mile west of the project site, has not historically produced seiches in association with tectonic activity. As a result, the campus is not at risk of seiche or tsunami inundation. Therefore, consistent with the analysis in the 2020 LRDP SEIR, there would be no impact with regard to this criterion and no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

As discussed above in **Section 5.11.1.a**, the project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality; therefore, the project would not conflict with or obstruct the implementation of the RWQCB's 2018 basin plan for the Central Valley Region,[30] which encompasses both the Sacramento River and San Joaquin River Basins.

As described in Section 4.4 of the 2020 LRDP SEIR, a Groundwater Sustainability Plan (GSP) was developed for the Merced Subbasin and was adopted in November 2019. Per the GSP, current agricultural and urban groundwater demand in the Merced Subbasin would need to be reduced by approximately 10 percent in order to balance out the change in groundwater storage over a long-term average condition, based on modeling of current and projected subbasin conditions and absent implementation of any new supply-side or recharge projects. As discussed above in **Section 5.11.1.b**, on both a per capita basis and total demand basis, UC Merced has reduced its demand substantially from previous levels and the reductions are significantly more than the required 10 percent water demand reduction identified in the GSP to bring the groundwater subbasin into balance. The Campus will continue to implement actions to reduce use of potable water, as reflected in the 2020 LRDP SEIR. The Campus will also continue to work with the City and the Merced Irrigation District (MID) to identify other sources of water, including the use of canal water for irrigation and other non-potable uses.

As discussed above, the project has been designed to minimize the use of potable water which is drawn from the on-site well; the incremental water usage due to the project would be small. Therefore, the proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

5.12 LAND USE AND PLANNING

Land Use and Planning Would the Project…	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
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?	☒	☐	☐	☐

5.12.1 Impact Analysis

a. Would the project physically divide an established community?

The project site is located in the northern portion of the campus. There is no existing community on or adjacent to the project site. As such, implementation of the project would not physically divide an established community. No impact would occur, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR and 2009 EIS/EIR, and no additional mitigation would be required.

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

UC Merced is a State entity and not subject to regional or local land use controls. As the project is located on the UC Merced campus, it would not be subject to land use plans, policies or regulations adopted by the City of Merced or Merced County to avoid or minimize an environmental effect. The land use plan that is applicable to the project is the 2020 LRDP. The 2020 LRDP was designed to guide the future development of the campus in a manner that would avoid and minimize any adverse effects of campus growth and development. The project would not conflict with the 2020 LRDP. It would be located in an area that is designated ROS, which allows for the siting of small-scale projects that would be used for field research and experimentation and would be designed in compliance with development standards in the 2020 LRDP and the Physical Design Framework of the UC Merced campus. The increases in campus population (2 employees) and building space attributable to the project are within the growth projections of the 2020 LRDP. Furthermore, the access road to the project site and the bridge across Le Grand Canal, as well as the vernal pool reconstruction area, are located on lands that are designated POS in the 2020 LRDP land use diagram. Improvements to the bridge and access road and vernal pool creation as part of the proposed project would not conflict with this designation. As such, implementation of the project would not cause a significant environmental impact due to a conflict with the 2020 LRDP. The impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR.

Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

5.13 MINERAL RESOURCES

Mineral Resources Would the Project…	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
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?	☒	☐	☐	☐

5.13.1 Impact Analysis

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

As discussed in Appendix A of the 2020 LRDP SEIR, the campus, including the project site, is not located on land designated as a mineral resource zone (MRZ). The Merced County General Plan Environmental Impact Report indicates the County's primary mineral resources are sand and gravel mining operations, with significant aggregate deposits concentrated along the San Joaquin River and its tributaries, including the Merced River.[31] These areas are not near the project site. Implementation of the project would not result in the loss of availability of a known mineral resource that would be valuable to the region and residents of the state. No impact would occur, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

5.14 NOISE

Noise Would the Project Result in…	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
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 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☒	☐	☐	☐

5.14.1 Impact Analysis

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

The project site is located within the UC Merced campus, which is located in eastern Merced County, east of Lake Yosemite and Lake Road, and approximately 2 miles northeast of the jurisdictional limits of the City of Merced. The project site houses a water tank, a decommissioned water tower, and livestock corrals, and no major fixed noise sources exist on the site. Noise sources in the vicinity of the project site include existing campus activity and traffic on campus roadways about 0.6 mile to the west. The nearest off-campus sensitive receptor is Lake Yosemite Regional Park, which is approximately 0.5 mile west of the project.

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

higher than these modeled levels due to the contribution of noise from other non-roadway noise sources.

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

Construction Noise

The project would generate temporary construction noise as construction activities occur. The closest sensitive receptors to the southernmost limits of the proposed project (i.e., the bridge crossing Le Grand Canal) are the Tuolumne and Mariposa student housing buildings, located approximately 1,700 feet (0.3 mile) southwest of the project site. The proposed Field Education Center/Field Research Station site is located approximately 1 mile north of these campus student housing buildings. The closest off-site sensitive receptor is Lake Yosemite Regional Park, which is located approximately 0.5 mile west of the project site.

As described in the 2020 LRDP SEIR, noise generated by construction activities is anticipated to be greatest during site grading activities and excavation for underground infrastructure. Noise generated during foundation and building construction would be lower. Maximum noise levels at a distance of 50 feet from the source would typically range from 70 to 90 dBA during excavation and grading activities and from 65 to 85 dBA during building construction. Hourly average construction noise levels measured at a distance of 50 feet from the project site are typically 75 dBA to 85 dBA during busy construction periods. Hourly average construction noise levels would typically range from 74 to 85 dBA at a distance of 50 feet from the center of construction activities and 56 to 71 dBA at a distance of 400 feet, not taking into account shielding from terrain. Maximum noise levels would typically range from 70 to 90 dBA at a distance of 50 feet and 52 to 72 dBA at a distance of 400 feet. Construction noise levels decrease at a rate of about 6 dBA per doubling of distance between the source and receptor. Shielding by terrain often results in much lower construction noise levels at distant receptors. A significant noise impact would occur if construction activity is predicted to result in: (1) maximum noise levels exceeding 75 dBA L_{max} at any residential property or 80 dBA L_{max} at any non-residential property between the hours of 6:00 p.m. and 7:00 a.m.; (2) an hourly average sound level that is more than 10 dBA L_{eq} above the ambient sound level between the hours of 6:00 p.m. and 10:00 p.m.; or (3) an hourly sound level more than 5 dBA L_{eq} above the ambient sound level between the hours of 10:00 p.m. and 7:00 a.m.

Due to the distance between the construction area of the proposed Field Education Center/Field Research Station site and the Yosemite Lake Regional Park (0.5 mile), as well as the distance between the project site and on-campus student housing (a minimum of 0.3 mile from the Le Grand Canal bridge crossing where access improvements would occur), along with the shielding provided by other intervening campus buildings, construction noise would not exceed the standards listed above at Lake Yosemite Regional Park or at the nearest student housing. Construction noise impacts would be less

than significant. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

Operational Noise

The 2020 LRDP SEIR analyzed the potential for campus development through 2030 under the 2020 LRDP to result in noise impacts. The project (development of the proposed Field Education Center/Field Research Station) is part of the UC Merced campus development anticipated under the 2020 LRDP and is defined as a small-scale project in the 2020 LRDP SEIR. Both the nominal increase in campus population (two employees) and the new building space that would be added to the campus by the project are accounted for in the growth assumptions of the 2020 LRDP; as such, the operational noise impacts of the project are adequately analyzed as part of the 2020 LRDP SEIR noise impact analysis.

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

Noise increases due to 2020 LRDP-related traffic on Bellevue and Lake Roads were calculated in the 2020 LRDP SEIR by comparing the 2020 LRDP traffic noise levels to no 2020 LRDP (Background) traffic noise levels within the same time frame. Background plus 2020 LRDP traffic on Bellevue Road would cause the ambient noise levels to increase from 58.5 dBA L_{dn} (East of SR 59) and 59.6 dBA L_{dn} (East of G Street) under existing conditions to about 61.1 dBA L_{dn} (East of SR 59) and 62.6 dBA L_{dn} (East of G Street) under 2030 conditions. Noise levels at residences at a distance of up to 80 feet from this roadway would experience a slightly higher noise level increase. Along Lake Road, noise levels would increase from about 60.9 dBA L_{dn} (South of Bellevue) and 61.0 dBA L_{dn} (South of Cardella) under existing conditions to about 61.6 dBA L_{dn} (South of Bellevue) and 62.6 dBA $L_{dn(}$ (South of Cardella) in 2030. The resulting noise levels in 2030 along both roadways would not exceed the exterior noise standard of 65 dBA L_{dn} that is applicable to residential land uses in Merced County. Furthermore, although campus growth under the 2020 LRDP would cause noise increases along both roadways, the increases would be less than 3 dBA. The project would add approximately 10,000 square feet of building space on the campus, which is well within and a small fraction of the 1.83 million gsf building space increase evaluated in the 2020 LRDP SEIR. The nominal population increase associated with the proposed project (two employees) is also within the projected 2020 to 2030 campus population increase that was analyzed in the 2020 LRDP SEIR (i.e., 6,431 students, faculty, and staff). The project's contribution to traffic-related increases in ambient noise levels is adequately analyzed in the 2020 LRDP noise analysis and determined to be a less-than-significant impact. Furthermore, if the traffic noise increase due to the project were to be separately calculated, it would be well below the significance criteria for a significant traffic noise impact. (Under the 2020 LRDP SEIR criteria, a noise impact would be considered significant if the project causes an increase of 5 dBA or more, where the noise levels without the project are 50 to 65 dBA L_{dn}

for residential uses and the increase in noise from the project does not cause the significance thresholds to be exceeded.) The traffic added by the project would not generate noise that would exceed this threshold.

Daily noise-generating activities associated with the project would include student gatherings and conversations, landscaping and maintenance activities, on-site traffic, and mechanical equipment noise. The closest off-campus noise-sensitive receptor to the project is Lake Yosemite Regional Park (approximately 0.5 mile west of the project site) and the nearest on-campus sensitive receptors are the Tuolumne and Mariposa student housing buildings, located approximately 0.3 mile southwest of the project site. As a result of the intervening distance and the fact that noise levels generated by the activities associated with the project would generally be low at the source, noise generated by daily activities at the proposed Field Education Center/Field Research Station is not expected to exceed the noise standard of 65 dBA L_{dn} exterior and 45 dBA L_{dn} interior at off-site residential locations or the noise standard of 70 dBA L_{dn} exterior for playgrounds and parks. Off-site receptors are not expected to be exposed to noise levels in excess of the standards for noise-sensitive uses with implementation of the project.

Overall, the project would not result in a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of established standards. Consistent with the analysis in the 2020 LRDP SEIR, impacts would be less than significant. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

The 2020 LRDP SEIR evaluated the potential impacts to on- and off-site sensitive uses from vibration generated by construction activities (specifically pile driver usage). Portions of the project site are located are more than feet of on-campus buildings (i.e., the footprint of the proposed Le Grand Canal bridge upgrades). At this time, it is not known if pile driving activities would be needed for the bridge improvements; however, as a conservative approach, the following analysis describes potential impacts associated with such construction activities at the bridge site. The proposed Field Education Center/Field Research Station would not involve the use of driven piles and is also distant from the sensitive receptors on the campus, so no groundborne vibration effects are expected from the construction of the Field Education Center/Field Research Station.

Impact pile drivers are estimated to generate an upper range of 0.537 inch/second, peak particle velocity (ppv), at a distance of 25 feet and vibratory pile drivers are estimated to generate an upper range of 0.260 inches/second, ppv. At a distance of 70 feet, impact pile drivers are estimated to generate an upper range of 0.173 inches/second, ppv, and vibratory pile drivers are estimated to generate an upper range of 0.084 inch/second, ppv. Groundborne vibration levels at distances of approximately 70 feet or more would not result in vibration levels exceeding 0.20 inch/second, ppv and therefore would not be anticipated to result in substantial effects. Impact pile driving within 25 feet of structures could cause structural damage to typical building structures and could cause annoyance to campus occupants. As the project site is located more than 100 feet from other campus buildings south of Le Grand Canal, any potential pile driving associated with the bridge

improvements would not result in significant impacts. Furthermore, the 2020 LRDP SEIR concludes that for small-scale projects that may be located within lands designated CMU, CBRSL or ROS, such as the proposed Field Education Center/Field Research Station, due to the location, small size, and nature of these projects, construction activities associated with these small projects would be unlikely to result in substantial vibrations and on- and off-site sensitive receptors would not be affected.

Thus, the project is not anticipated to result in generation of excessive groundborne vibration or groundborne noise levels. Consistent with the analysis in the 2020 LRDP SEIR, impacts would be less than significant. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The Merced Regional Airport is approximately 7.5 miles southwest of the project site, and Merced-Castle Airport (the former Castle Air Force Base) is approximately 7.5 miles to the west. While noise from aircraft overflights is occasionally perceptible at the project site, it does not substantially affect the noise environment. A review of the County's Noise Element indicates that the 65 dBA L_{dn} noise contours associated with the airports in the region do not encompass or include any portion of the project site or the UC Merced campus. A private airstrip is located approximately 1.8 miles southeast of the project site and UC Merced campus. The airstrip is used by planes involved in agriculture operations (e.g., fertilizing, seeding, and baiting). As the airstrip does not support commercial flights and is used for a limited number of agricultural flights, it is not anticipated that airstrip operations would expose the project occupants to excessive noise levels.

Implementation of the project would not expose people residing or working in the area to excessive noise levels from public and private airport/airstrip operations. Consistent with the analysis in the 2020 LRDP SEIR, no impact would occur. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

5.15 POPULATION AND HOUSING

Population and Housing Would the Project…	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
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?	☒	☐	☐	☐

5.15.1 Impact Analysis

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

The UC Merced campus and the proposed project are located in the County of Merced, which has a current (2022) population of approximately 284,338 residents. There are approximately 90,883 residents that live in unincorporated areas of the County, while the remaining balance live in incorporated cities within Merced County. The City of Merced has a current (2022) population of approximately 89,058 residents.[32] By 2035, the estimated population for Merced County will be 330,805 residents, while the estimated population for the City of Merced will be 101,585 residents.[33]

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

[32] State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2021-2022*. Sacramento, California, May 2022. https://dof.ca.gov/wp-content/uploads/Forecasting/Demographics/Documents/E-5_2022_InternetVersion.xlsx, Accessed August 17, 2022.

[33] Merced County Association of Governments (MCAG), 2022 Regional Transportation Plan/Sustainable Communities Strategy for Merced County.

the new employees would live off campus. The 2020 LRDP SEIR determined that enough housing is available and planned in the City of Merced and in communities within the 40-mile radius of the campus to house the new students and employees who would live off campus.

As discussed in **Section 3.7.1** of this Addendum, it is anticipated that the maximum population increase resulting from the proposed project would be two employees. The proposed project would thus not result in an increase in the student or faculty population than what was analyzed and projected in the 2020 LRDP EIR. The two employees associated with the proposed project are a part of the population growth projected under the 2020 LRDP and are accounted for in the analysis of population and housing impacts of campus growth by 2030 as presented in the 2020 LRDP SEIR.

In summary, as enough housing is available and planned in the City of Merced and in communities within the 40-mile radius study area to house additional employees and dependents that would relocate into the study area, the impact on population growth and housing would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

The proposed project would be developed on a portion of the UC Merced campus that is currently vacant. No residential units or student housing is located on the proposed project site. As such, implementation of the proposed project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. No impact would occur, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

5.16 PUBLIC SERVICES

Public Services Would the Project…	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	☒	☐	☐	☐
ii. Police protection?	☒	☐	☐	☐
iii. Schools?	☒	☐	☐	☐
iv. Parks?	☒	☐	☐	☐
v. Other public facilities?	☒	☐	☐	☐

5.16.1 Impact Analysis

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

i. Fire protection?

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

With the development of additional building space on the campus under the 2020 LRDP, the campus would accommodate a total population of about 17,411 persons by 2030. The SEIR analysis found that because the growth on the UC Merced campus would occur incrementally over the planning horizon of the 2020 LRDP, there was not an immediate need for an increased fire service or additional resources from the fire department. However, if the demand for staff and equipment to serve new campus development resulted in the need for new or modified fire station facilities to house the additional staff and/or equipment, the environmental impacts from fire station

construction would need to be evaluated and disclosed. The SEIR noted that the environmental impacts from an expansion of the existing County Fire Station No. 85 are expected be less than significant or less than significant with mitigation. It also noted that if the existing County fire station is expanded or a new one is constructed by the County and significant environmental impacts requiring mitigation are identified by the County, the University will pay for its fair share of the cost of environmental mitigation.

As described in **Section 3.7.1**, the proposed Field Education Center/Field Research Station would result in a nominal increase in the campus population (two employees), and the project would increase the amount of building space on the campus compared to existing conditions. However, the increase (10,000 square feet) due to the project would be a very small portion of the projected increase in building space under the 2020 LRDP (1,830,000 square feet). Furthermore, the proposed project would be developed to existing California Fire Building Code standards as well as UC Merced building code fire standards. The new building would be designed with a sprinkler system, fire extinguishers in various locations, and a fire alarm system to alert occupants in the event of a fire. The proposed building would be one story in height, allowing fire apparatus to easily access all parts of the building in the event of a fire.

Due to the safety features included in the project and the small amount of building space added by the project to the campus, the project would not require additional fire fighters or equipment, and would not require any upgrades to the fire station that serves the campus. No impact would occur, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

ii. Police protection?

The UC Merced campus, including the project site, is served by the UC Merced Police Department. To maintain the right staffing level, about 30 sworn officers would be required at full campus development under the 2020 LRDP. The 2020 LRDP land use diagram includes adequate land for the expansion of the campus public safety (police) building as needed. The environmental consequences of developing campus facilities, including additional police facilities, on land designated CMU in the 2020 LRDP were evaluated in the 2020 LRDP SEIR and were mitigated to a less-than-significant level by the mitigation measures included in the 2020 LRDP SEIR. The 2020 LRDP SEIR determined that environmental impacts associated with future campus police station expansion would be reduced to less-than-significant levels.

The proposed Field Education Center/Field Research Station would increase the amount of building space on the campus compared to existing conditions, but the increase would be a small portion of the projected increase in building space under the 2020 LRDP (10,000 square feet of 1.83 million square feet). As described above in **Section 3.7.1**, due to the size and nature of the proposed project, the project would only result in a nominal increase in the campus population (two employees), which is well within the population growth projected under the 2020 LRDP. In addition, the proposed project would include security features that would ensure that safety in the area is maintained and that the need for UC Merced Police Department services would not be substantially increased due to a substantial increase in calls for service.

In summary, for reasons discussed above, implementation of the proposed project would not increase the need for police services such that expanded facilities or new facilities would be required, the development of which could result in an environmental impact. As such, impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR**.** Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

iii. Schools?

As described in the 2020 LRDP SEIR, the campus, as well as the project site, is located within the boundaries of the Merced City School District (MCSD), the Weaver Union School District (WUSD), and the Merced Union High School District (MUSHD). There are 14 elementary schools and 4 middle schools in the MCSD. Development of the UC Merced campus, including the proposed project, under the 2020 LRDP would generate a demand for primary and secondary education facilities. The 2020 LRDP SEIR concluded that development of the campus under the 2020 LRDP would generate a total of 900 K-12 students. The approximately 900 K-12 students generated by development under the 2020 LRDP would be dispersed throughout the City of Merced as well as in other Merced County communities and in Mariposa and Stanislaus Counties. The SEIR also noted that as the population of the UC Merced campus grows and employees are hired within the parameters of the 2020 LRDP, homes will concurrently be developed throughout the surrounding area. Pursuant to SB 50, developers will be required to pay school impact fees as single-family homes or multi-family units are constructed. School impact fees are considered full and complete mitigation for school impacts. Students, faculty and staff associated with UC Merced that are homeowners would also pay property taxes, a portion of which would go towards the funding of local K-12 public schools. As noted in **Section 3.7.1,** the proposed project would only result in a nominal increase in the campus population (two employees), which is well within the population growth projected under the 2020 LRDP. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

iv. Parks?

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

As described in the 2020 LRDP SEIR, development of the campus under the 2020 LRDP would result in a residential population on the campus of about 7,200 students by 2030. Recreational facilities and open space that would be developed on the campus under the 2020 LRDP would adequately serve the needs of the on-campus residential population, as well as the daytime population of the UC Merced campus. Consequently, the campus population increase would not result in demand for the construction of off-site recreational facilities. As discussed in **Section 3.7.1,** the proposed project would result in a nominal increase in the campus population (two employees), which is well within the population growth projected under the 2020 LRDP. Therefore, implementation of the proposed

project would not trigger construction of new parks or require expansion of existing parks on or off campus.

Due to the proximity of Lake Yosemite Regional Park to the campus, as well as the proposed project site, and the range of unique water-related recreational amenities offered at the regional park that would not be available on campus, the SEIR noted that it was anticipated that new on-campus student residents as well as faculty and staff would use the regional park. Because the Lake Yosemite Regional Park is currently at capacity during summer months, the 2020 LRDP SEIR conservatively assumed that the use of the park by the students could contribute to the acceleration of physical deterioration of the park facilities and contribute to the need for new park facilities. While the 2020 LRDP SEIR concluded that most of the increase in park facility use associated with the campus (i.e., between fall and late spring when school is in session) would not coincide with the current peak park use which occurs during summer, it nonetheless determined that the deterioration of existing park facilities could be accelerated and this was considered a potentially significant impact associated with implementation of development under the 2020 LRDP. The 2020 LRDP SEIR identified **2020 LRDP Mitigation Measures PUB-6a** through **PUB-6c** to reduce the impact on Lake Yosemite Regional Park from campus development to a less-than-significant level. As noted in **Section 3.7.1**, the proposed project would result in a nominal increase in the campus population (two employees), which is well within the population growth projected under the 2020 LRDP. However, due to the small increase in population, the project would not result in an impact on Lake Yosemite Regional Park. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

v. Other public facilities?

UC Merced provides extensive library resources through its Leo & Dottie Kolligian Library, located on the campus at 5200 North Lake Road. The increased population associated with the campus under the 2020 LRDP would result in increased demand for public library services compared to existing conditions. However, the library system of the campus would continue to meet the needs of a modern research and teaching institution, and thus provide a large array of library services, would continue to be available to students, staff, and faculty of the campus, as well as the general public on a limited basis. Therefore, the LRDP SEIR concluded that the impact of campus growth under the 2020 LRDP on the City library system would be less than significant. As noted in **Section 3.7.1**, the proposed project would result in a nominal increase in the campus population (two employees), which is well within the population growth projected under the 2020 LRDP. Consequently, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

5.17 RECREATION

Recreation Would the Project…	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
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?	☒	☐	☐	☐

5.17.1 Impact Analysis

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

Impacts on recreation facilities located at Lake Yosemite Regional Park from the development of the campus under the 2020 LRDP was evaluated in the 2020 LRDP SEIR and **Section 5.16.1.a (iv)** of this Addendum. The 2020 LRDP SEIR concluded that growth of the campus population through 2030 could contribute to the degradation of facilities at Lake Yosemite Regional Park. As such, the 2020 LRDP SEIR identified **2020 LRDP Mitigation Measures PUB-6a** through **PUB-6c** to reduce the impact on Lake Yosemite Regional Park from campus development to a less-than-significant level. As noted in **Section 3.7.1**, the proposed project would result in a nominal increase in the campus population (two employees), which is well within the population growth projected under the 2020 LRDP. Additionally, recreational facilities and open space that would be developed on the campus under the 2020 LRDP would adequately serve the needs of the campus population, including the proposed project. Therefore, the project would not result in an impact on Lake Yosemite Regional Park. No new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

The 2020 LRDP SEIR analyzed and disclosed the physical impacts on the environment from campus development under the 2020 LRDP, including the recreational facilities that may be developed on the campus under the plan. Although the proposed project would provide indoor gathering spaces for research and educational purposes, the proposed project would not include recreational facilities or require the construction or expansion of recreational facilities that may have an impact

on the environment. Impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

5.18 TRANSPORTATION

Transportation Would the Project…	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☒	☐	☐	☐
b. Conflict or be inconsistent with CEQA Guidelines §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?	☒	☐	☐	☐

5.18.1 Impact Analysis

a. Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

The 2020 LRDP SEIR analyzed the potential for campus growth to affect the circulation system, including transit, roadway, bicycle and pedestrian facilities. With respect to the roadway facilities near the campus, the 2020 LRDP SEIR noted that the plan would not make any changes to roadways outside of the campus and that the plan had been designed to accommodate the future development of Campus Parkway. The proposed Field Education Center/Field Research Station would also not make any changes to roadways outside of the campus and would not interfere with the development of Campus Parkway. The project would not result in a new or substantially more severe impact related to roadway facilities than that evaluated in the 2020 LRDP SEIR, and no new mitigation would be required.

With respect to impacts on transit service, similar to the 2020 LRDP, the proposed project does not include any changes to transit service or infrastructure provided by non-University operators. UC Merced will continue to make improvements to CatTracks to serve the enrolled students, faculty and staff and will continue to work with transit providers to coordinate service with the campus-provided service. The project would not result in a new or substantially more severe impact related to transit than that evaluated in the 2020 LRDP SEIR, and no new mitigation would be required.

With respect to pedestrian and bicycle facilities, the SEIR stated that no infrastructure changes outside the campus would be made under the 2020 LRDP and, thus, the project would not disrupt existing facilities, interfere with existing or planned pedestrian and bicycle facilities, nor conflict with adopted plans. The proposed project would include connectivity to the existing trails on the UC

Merced campus as well as improvements to the access roadway and bridge. The project would not result in a new or substantially more severe impact on bicycle and pedestrian facilities than that evaluated in the 2020 LRDP SEIR, and no new mitigation would be required.

Overall, the proposed project would not conflict with a program, plan, ordinance, or policy related to transit, roadway, or bicycle and pedestrian facilities. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

b. Would the project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?

The 2020 LRDP SEIR analyzed potential impacts of traffic generated by campus growth on roadway facilities based on an analysis of level of service (LOS) impacts at a number of study intersections under Year 2030 No 2020 LRDP Conditions and Year 2030 with 2020 LRDP Conditions. However, since the certification of the 2020 LRDP SEIR in March 2020, CEQA documents (as of July 1, 2020) must evaluate transportation impacts based on vehicle miles traveled (VMT), consistent with Senate Bill 743. As specified by SB 743 and the associated updates to the State CEQA Guidelines, automobile delay, as measured by "level of service" and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA (Public Resources Code, Section 21099, subd. (b)(3)). Therefore, in 2022, UC Merced prepared and circulated an updated supplemental program-level transportation impact analysis of campus growth through 2030 under the 2020 LRDP based on VMT metrics consistent with State CEQA Guidelines Section 15064.3, subdivision (b). The supplemental program-level VMT analysis was published in the UC Merced Medical Education Building Project Draft EIR[34], and the Final EIR[35] was certified by the University on November 17, 2022. As described in the program-level VMT analysis, implementation of the 2020 LRDP would not exceed an applicable VMT threshold of significance under 2030 with LRDP conditions and therefore would not conflict with State CEQA Guidelines Section 15064.3, subdivision (b).

As discussed in **Section 3.7.1**, the proposed project would result in a nominal increase in the campus population (two employees), which is well within the population growth projected under the 2020 LRDP. Therefore, the project would not result in a significant increase in daily vehicle trips to and from the campus and there would not be a significant increase in VMT due to the project employees. Furthermore, because these employees are within the population growth projected under the 2020 LRDP, the transportation/VMT impact of these employees is adequately addressed by the supplemental program-level VMT analysis discussed above.

The proposed project would result in vehicle trips and VMT associated with persons unaffiliated with UC who would travel to the project site to attend educational and public service events. However, the increase in VMT would not be large as the events would not be frequent, and larger groups of attendees, such as K-12 students, would travel to the project site in buses. According to the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, issued by the Governor's

[34] University of California, Merced. 2022b. op. cit.
[35] University of California, Merced. 2022c. op. cit.

Office of Planning and Research[36], "Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less than significant transportation impact." The proposed project would generate less than 110 vehicle trips per day. Therefore, it would result in a less than significant VMT impact, and no new mitigation would be required.

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

Implementation of the proposed project would not include changes to off-campus roadways. The project site would be accessed via the existing Ranchers Road in the northern portion of the campus. The road is a paved roadway between Lake Road and a bridge over Le Grand Canal. Beyond the bridge the roadway is unpaved. The unpaved section and the bridge would be improved as part of the proposed project. However, there is no geometric design feature associated with the section of the roadway that would be improved that would increase hazards. As such, the proposed project would not increase hazards due to a geometric design feature of roadways or intersections. No impact would occur, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

d. Would the project result in inadequate emergency access?

As described in the 2020 LRDP SEIR, all transportation facilities, including connections to off-campus facilities and the proposed project site, would be constructed according to State of California design standards for roadway and intersection design and operations. Ranchers Road would continue to provide access to the proposed project. The roadway 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. Impacts would be less than significant, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

[36] California Office of Planning and Research. 2018. "Technical Advisory on Evaluating Transportation Impacts in CEQA." https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. Accessed July 13, 2022.

5.19 TRIBAL CULTURAL RESOURCES

Tribal Cultural Resources Would the Project…	**Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR**	**Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR**		
		No Impact	**Less than Significant Impact**	**Potentially Significant Impact**
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or	☒	☐	☐	☐
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☒	☐	☐	☐

5.19.1 Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Assembly Bill (AB) 52, which came into effect on July 1, 2015, requires that lead agencies consider the effects of projects on tribal cultural resources (TCRs) and conduct notification and consultation with federally and non-federally recognized Native American tribes early in the environmental review process. In compliance with AB 52, UC Merced conducted consultation with interested tribes

during the preparation of the 2020 LRDP SEIR. The results of the consultation are documented in the 2020 LRDP SEIR. No requests for formal consultation were received by UC Merced, and no TCRs were identified as part of the AB 52 consultation conducted for the 2020 LRDP SEIR. As reflected in the 2020 LRDP SEIR, the geographic area of the UC Merced campus is not known to contain TCRs. Based on surveys conducted prior to and in conjunction with the preparation of the 2009 LRDP EIS/EIR, no known prehistoric sites are located within the campus site, although previously recorded prehistoric sites were identified within the University Community North study area. Furthermore, no cultural resources have been encountered during grading and excavation conducted on the campus site since 2002 when the construction of the campus was commenced. Therefore, the campus is not expected to contain any TCRs.

The proposed project is consistent with and within the scope of development under the 2020 LRDP. Further consultation with interested tribes is therefore not required. Furthermore, according to the guidance provided by the state, AB 52 consultation is required when the lead agency proposes the preparation of an EIR or a Negative Declaration and is not required for other CEQA documents such as categorical exemptions or an addendum. Additionally, all projects under the 2020 LRDP would be required to implement **2020 LRDP Mitigation Measures CUL-2** and **CUL-3** (see **Section 6.4** of this Addendum) to ensure that should cultural resources, including human remains, be encountered, they would be protected, documented, and preserved, as appropriate. In summary, the proposed project would result in a less-than-significant impact on TCRs, consistent with the analysis in the 2020 LRDP SEIR. No new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

5.20 UTILITIES AND SERVICE SYSTEMS

Utilities and Service Systems Would the Project…	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater 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?	☒	☐	☐	☐

5.20.1 Impact Analysis

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

The proposed project would be developed with a net zero design (i.e., all energy would be supplied through renewable sources for zero carbon emissions) to minimize the impact of project operations on the environment.

Water for drinking as well as fire suppression would be provided by the existing on-site well. A new 200-gallon water tank would be used to store well water. Well water would be supplemented by capturing and storing rainwater in a tank/surface pond and using it for on-site irrigation, fire suppression, and recharge. To minimize the use of groundwater, grey water (water from sinks) generated on site would be captured and used for toilet flushing.

Visitor use of the Field Education Center/Field Research Station would result in the generation of wastewater. As stated above, grey water would be reused. To treat wastewater from restrooms, a composting toilet system would be installed on site.

The project would operate off the electrical grid. All the needed electricity would be generated on site. A wind turbine and roof-top arrays of photovoltaic panels would be installed as part of the project along with battery storage.

As stated above, stormwater runoff from the rooftops and paved areas of the site would be captured and stored in an on-site tank or a surface pond and used for irrigation, fire suppression, and recharge.

All of the utility infrastructure improvements would be located within the 10-acre Field Education Center/Field Research Station project site. All of the environmental impacts from the construction of these improvements are addressed in other sections of this Addendum and are within the scope of the environmental analysis that was completed in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

The project site is served by an existing on-site well. Water for drinking as well as fire suppression would be provided by the existing on-site well. Due to the nature of the proposed project and the features included in project design to minimize water use, there would not be a large increase in water use at the project site due to project implementation.

As discussed in the 2020 LRDP SEIR, the City of Merced provides potable water to the campus. The City's water supply is drawn from 20 active production wells, including Well Number 17 which is located on the campus. The City provides potable water to the campus via its distribution system, via a 16-inch water line that was constructed within the roadway alignment of Bellevue Road. The 2020 LRDP SEIR determined that by 2030, the water demand for the UC Merced campus would be 612 AFY. In its 2015 UWMP, the City of Merced, estimated and included a demand of 1,406 AFY of water for the campus in 2030. Thus, the total demand of the UC Merced campus under the 2020 LRDP is well below the 1,406 AFY of water per year accounted for in the approved 2015 UWMP. In addition, the 2015 UWMP concluded that the City of Merced has an adequate groundwater supply to meet water demands in its service area through 2035, including the UC Merced water demand under the 2020 LRDP, during normal, single-dry, and multi-dry years.[37] The proposed project's additional building space is within the space projections for the campus under the 2020 LRDP, and

[37] Since the certification of the 2020 LRDP SEIR, in August 2021, the City of Merced adopted the 2020 Urban Water Management Plan. That plan included the projected campus population growth under the 2020 LRDP and the associated increase in water demand at the campus. Similar to the 2015 UWMP, the 2020 UWMP also concluded that the City of Merced has an adequate water supply to meet water demands in its service area through 2040, including the UC Merced water demand under the 2020 LRDP, during normal, single dry, and multi-dry years.

the project would result in a nominal increase in campus population (two employees) that is also within the population growth projected under the 2020 LRDP. Furthermore, the project would not be served by water from the City's distribution system. Therefore, consistent with the analysis in the 2020 LRDP SEIR, impacts would be less than significant, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

As noted above, visitor use of the Field Education Center/Field Research Station would result in the generation of wastewater. Grey water would be reused. Wastewater from restrooms and kitchen sinks would be treated on site in a composting toilet system and would not be discharged off-site into the City's wastewater collection system. The proposed project would therefore not affect the City's collection or treatment capacity.

The 2020 LRDP SEIR evaluated the amount of wastewater that would be generated due to campus buildout through 2030 and concluded that the City's wastewater collection and treatment system was adequate to serve the campus development under the 2020 LRDP along with the City's existing commitments. The proposed project's additional building space is within the space projections for the campus under the 2020 LRDP, and the project would result in a nominal increase in the campus population (two employees) that is within the population growth projected under the 2020 LRDP. Furthermore, the project would not be served by the City's collection and treatment system. All wastewater from the proposed project would be treated onsite, therefore there would be no impacts to the City of Merced's Wastewater Treatment Plant or any other wastewater treatment provider, consistent with the analysis in the 2020 LRDP SEIR. Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The 2020 LRDP SEIR evaluated the amount of solid waste that would be generated due to campus buildout through 2030 under the 2020 LRDP. Based on the amount of waste projected to be generated under buildout conditions and the available capacity at Highway 59 Landfill, the analysis concluded that the impact related to solid waste would be less than significant. As detailed above under previous responses, while the proposed project would result in a nominal increase campus population that is within the population growth projected under the 2020 LRDP, and the building space associated with the proposed project is within the growth assumptions used in the 2020 LRDP SEIR analyses. As such, the proposed project has been accounted for in the 2020 LRDP and its solid waste generation/disposal. Consistent with the analysis in the 2020 LRDP SEIR, impacts would be

less than significant**.** Therefore, no new or substantially more severe impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

5.21 WILDFIRE

Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
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?	☐	☐	☒	☐

According to the California Department of Forest and Fire Protection (CalFire), the campus, including the project site, is not located in a State Responsibility Area (SRA) or Local Responsibility Area (LRA) Very High Fire Hazard Severity Zone (VHFHSZ).[38] CalFire has a legal responsibility to provide fire protection on all SRA lands, which are defined based on land ownership, population density and land use. Local cities and jurisdictions are responsible for fire protection on all land designated as LRAs. An SRA Moderate Fire Hazard Severity Zone is designated adjacent to the northeast boundary of the campus within the Campus Natural Reserve of the MVPGR.[39]

5.21.1 Impact Analysis

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

UC Merced has adopted both an Emergency Operations Plan and a Crisis Communications Plan. The Campus emergency response team is trained and equipped to respond to campus emergencies including fires. UC Merced provides sufficient resources to respond to campus emergencies, in coordination with the County of Merced, if necessary. In addition, UC Merced would prepare (or

[38] CAL FIRE, Fire and Resource Assessment Program, California Fire Hazard Severity Zone Viewer, Website: https://egis.fire.ca.gov/FHSZ/. Accessed November 10, 2022.

[39] Ibid.

update) safety planning documents in accordance with California Health and Safety Code Section 25517.5, as well as applicable laws, regulations, and campus policies. The Campus would implement safety training programs upon occupying a new campus building to ensure efficient implementation of any emergency response plan. The new Field Education Center/Field Research Station would be assigned a building safety coordinator who would address emergency planning and safety training for the faculty, staff, students, and visitors. According to the 2020 LRDP SEIR, development of the campus, including the proposed project, would not impair implementation of or physically interfere with any emergency response plan or emergency evacuation plan, and therefore, no new impacts would occur that have not already been addressed in the 2020 LRDP SEIR, and no additional mitigation would be required.

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

As disclosed above, the UC Merced campus is not located in a designated SRA or LRA VHFHSZ. The proposed project is located in the northern portion of the campus on land that is relatively flat. As the UC Merced campus is located on the floor of the Central Valley, smoke from nearby fires has the potential to accumulate in the valley dependent on the wind pattern and inversion layer associated with local weather events. The proposed project would be under and would comply with the Emergency Operations Plan and Crisis Communications Plan of UC Merced. The UCM NRS would prepare and implement an individual emergency response plan that would provide evacuation procedures in the event of a fire or wildfire in the area. The new Field Education Center/Field Research Station would be assigned a building safety coordinator who would address emergency planning and safety training for faculty, staff, students and visitors. Finally, the proposed project would be designed to comply with the most current California Fire Code requirements and would include such features as fire sprinkler systems. Implementation of the proposed Project would not exacerbate wildfire risks and thereby would not expose project users to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. The impact would be less than significant. Therefore, no new significant impacts would occur, and no new mitigation would be required.

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

The proposed project includes the development of the proposed Field Education Center/Field Research Station. Although the existing access road and bridge would be improved, 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 or result in temporary or ongoing impacts on the environment. The impact would be less than significant. Therefore, no new significant impacts would occur, and no new mitigation would be required.

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

The project site, similar to the majority of the UC Merced campus, is located on relatively flat land. The foothills of the Sierra Nevada Mountain range are located approximately 9.5 miles east of the Project site (the nearest sloped topography to UC Merced and the project site); as such, the project site has a low susceptibility to downslope or downstream flooding or landslides as a result of runoff or post-fire slope instability. The impact would be less than significant. Therefore, no new significant impacts would occur, and no new mitigation would be required.

5.22 MANDATORY FINDINGS OF SIGNIFICANCE

Mandatory Findings of Significance	Impact Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR	Impact not Examined in 2020 LRDP SEIR and 2009 LRDP EIS/EIR		
		No Impact	Less than Significant Impact	Potentially Significant Impact
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?	☒	☐	☐	☐

5.22.1 Impact Analysis

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

As discussed in the analysis in the preceding sections in this Addendum, the proposed project would not have the potential to substantially degrade the environment, reduce habitat, affect plant or wildlife species to drop below self-sustaining levels, reduce or restrict the range of endangered species or eliminate important examples of California prehistory or history. With implementation of the **2020 LRDP Mitigation Measures** listed in **Sections 6.3** and **6.4** of this Addendum; continued adherence to the protocols outlined in **Appendix A** that the University follows to evaluate and approve, deny, or condition research and educational uses on the MVPGR; compliance with relevant local, State, and federal requirements, including federal and state permits issued to the Campus; and application of University of California standard practices, development of the project would not: (1) degrade the quality of the environment; (2) substantially reduce the habitat of fish or wildlife species; (3) cause a fish or wildlife population to drop below self-sustaining levels; (4) threaten to

eliminate a plant or animal community; (5) reduce the number or restrict the range of a rare or endangered plant or animal; or (6) eliminate an important example of a major period of California history. Project impacts for items (1) through (6) would be less than significant with the incorporation of **2020 LRDP Mitigation Measures,** compliance with permits, and continued adherence to the MVPGR research and educational use access protocols in **Appendix A**.

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)?

The cumulative impacts of campus development, including those that would result from the proposed project, are fully evaluated in the 2020 LRDP SEIR. All of the cumulative impacts of the proposed project would not be cumulatively considerable. The project is within the scope of campus development and population evaluated in the 2020 LRDP SEIR, as noted in **Section 4.0** of this Addendum. These impacts were also addressed in the Findings and Statement of Overriding Considerations adopted by the Regents in connection with their approval of the 2020 LRDP. No conditions have changed, and no new information has become available since certification of the 2020 LRDP SEIR that would alter this previous analysis. No additional mitigation is available to reduce the project's contribution to these previously identified impacts.

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

As shown by the analysis in the preceding sections of this Addendum, the project would not result in environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly. Implementation of the **2020 LRDP Mitigation Measures** included in **Section 6.0**, compliance with federal and state regulations, and application of standard construction practices would ensure that the project would not result in environmental impacts that would cause substantial direct or indirect adverse impacts on human beings. Impacts would be less than significant with the incorporation of **2020 LRDP Mitigation Measures**.

6.0 APPLICABLE 2020 LRDP SEIR MITIGATION MEASURES

The following mitigation measures were adopted upon approval of the 2020 LRDP SEIR and would be applicable to the mitigation of impacts associated with the proposed UC Merced Field Education Center/Field Research Station.

6.1 AESTHETICS

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

6.2 AIR QUALITY

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

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

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.

- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.

- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions using application of water or by presoaking.

- When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least 6 inches of freeboard space from the top of the container shall be maintained.

- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary

brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit visible dust emissions. Use of blower devices is expressly forbidden.)

- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, storage piles shall be effectively stabilized of fugitive dust emissions by using sufficient water or chemical stabilizer/ suppressant.

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

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

6.3 BIOLOGICAL RESOURCES

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

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

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

- Specifications for construction timing and sequencing requirements (e.g., avoidance of raking, mowing, tilling, or other ground disturbance until late March to protect overwintering queens);
- Preconstruction surveys conducted within 30 days and consistent with any current available CDFW standards prior to the state of ground disturbing activities to identify active nests;
- Establishment of appropriate no-disturbance buffers for nest sites and construction monitoring by a qualified biologist to ensure compliance;
- Restrictions associated with construction practices, equipment, or materials that may harm bumble bees (e.g., avoidance of pesticides/herbicides, BMPs to minimize the spread of invasive plant species);
- Provisions to avoid Crotch bumble bees or potential Crotch bumble bees if observed away from a nest during project activity (e.g., ceasing of project activities until the animal has left the work area on its own volition); and
- Prescription of an appropriate restoration seed mix targeted for the Crotch bumble bee, including native plant species known to be visited by native bumble bee species and containing a mix of flowering plant species with continual floral availability through the entire active season of the Crotch bumble bee (March to October).

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

- Limit ground disturbance activities to the non-breeding season and remove potential unoccupied breeding habitat during the non-breeding season if possible. If breeding season work is required, conduct take avoidance (tree, shrub, and ground) test surveys to identify and avoid active nests.
    - If feasible, UC Merced shall conduct all project-related activities including (but not limited to) tree and shrub removal, other vegetation clearing, grading, or other ground disturbing activities during the non-breeding season (typically between September 16 and February 14).
    - If activities are scheduled to occur during the breeding season (typically between February 15 through September 15), applicable CDFW and/or USFWS permit conditions in the permits issued to the University related to bird surveys must be followed. In addition, a UC Merced approved qualified avian biologist, with knowledge of the species to be surveyed, shall conduct focused nesting surveys within 15 days prior to the start of project or ground-disturbing activities and within the appropriate habitat. The qualified avian biologist shall

determine the exact survey duration and location (typically 500 feet around the work area) based on the work conditions and shall take into account existing applicable CDFW or USFWS permit conditions.

- If an unoccupied nest (without birds or eggs) of a non-listed of fully protected species (as determined by the qualified avian biologist) is found, the nest shall be removed under the direction of the qualified avian biologist.

- If an active nest is located, a qualified avian biologist shall establish an appropriate no-disturbance buffer around the nest making sure that any buffer width required by the University's permit obligations is followed. A 500-foot buffer is recommended for listed or fully protected nesting birds (or another buffer determined in consultation with CDFW and/or USFWS), a 250-foot buffer around raptors, and a 75-foot buffer around passerines. If work activities cause or contribute to a bird being flushed from a nest, the buffer width shall be adjusted to avoid and minimize impacts to nesting birds.

- A qualified avian biologist shall monitor the nest site regularly during work activities to ensure that the nest site is not disturbed, the buffer is maintained and the success or failure of the nest is documented.

- If UC Merced elects to remove a nest tree, nest trees may only be removed after the qualified avian biologist has determined that the nests are unoccupied.

- If an active nest is causing a safety hazard, CDFW shall be contacted to determine if the nest can be removed.

- Minimize impacts to burrowing owl and compensate for habitat loss. CDFW (2012) recommends that take avoidance (preconstruction) surveys be conducted to locate active burrowing owl burrows in the construction work area and within an approximately 500-foot buffer zone around the construction area. A qualified avian biologist shall conduct take avoidance surveys for active burrows according to the CDFW's Staff Report on Burrowing Owl Mitigation (2012 Staff Report). Surveys shall be conducted no less than 14 days prior to initiating ground disturbance activities and surveillance surveys should be conducted as frequently as recommended in the 2012 Staff Report. If ground-disturbing activities are delayed or suspended for than 30 days after the take avoidance survey, the area shall be resurveyed. If no burrowing owls are detected, no further mitigation is required. If the active burrowing owls are detected, the following additional measures are required:

  - Project implementation shall seasonally and spatially avoid negative impacts and disturbances that could result in the take of burrowing owls, nest or eggs.

  - If burrowing owls and their habitat can be protected in place or adjacent to a construction site, buffer zones, visual screens or other measures shall be used to minimize disturbance impacts while project activities are occurring. To use these minimization measures, a qualified avian biologist shall determine the exact measures following the guidance described in the 2012 Staff Report.

- If owls must be moved away from the project site during the nonbreeding season, passive relocation techniques (e.g., installing one- way doors at burrow entrances) shall be used instead of trapping, as described in CDFW guidelines. At least 1 week will be necessary to complete passive relocation and allow owls to acclimate to alternate burrows.

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

6.4 CULTURAL RESOURCES

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

2020 LRDP MM CUL-3: If human remains of Native American origin are discovered during ground disturbing activities, the Campus and/or developer will comply with state laws relating to the disposition of Native American burials, which falls within the jurisdiction of the California Native American Heritage Commission (Public Resources Code Section 5097). If human remains are discovered or recognized in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the coroner of Merced County has been informed and has determined that no investigation of the cause of death is required; and if the remains are of Native American origin; the descendants from the deceased Native American have made a recommendation to the land owner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and associated grave goods as provided in Public Resources Code Section 5097.98; or the California Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the Commission.

6.5 GEOLOGY AND SOILS

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

recommendations designed to mitigate for the site hazards. The geotechnical recommendations will be followed.

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

2020 LRDP MM CUL-4b: A qualified paleontologist will be intermittently present to inspect exposures of Merhten Formation, North Merced Gravels, and Riverbank Formation during construction operations to ensure that paleontological resources are not destroyed by project construction.

6.6 GREENHOUSE GAS EMISSIONS

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

6.7 HAZARDS AND HAZARDOUS MATERIALS

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

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APPENDIX A

CURRENT PROTOCOLS FOR RESEARCH AND EDUCATIONAL USES ON THE MVPGR

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APPENDIX A

CURRENT PROTOCOLS FOR RESEARCH AND EDUCATIONAL USES ON THE MVPGR

1.1 INTRODUCTION

This appendix summarizes how the University of California (UC or University) processes requests from UC researchers and others to conduct research and educational activities on the Merced Vernal Pools and Grassland Reserve (MVPGR) and monitors these activities to ensure that adverse impacts on the conservation values of the MVPGR are avoided.

The land management, mitigation, and environmental and species protection requirements remain the University's primary commitment with respect to the MVPGR. Facilitating research and educational uses on the MVPGR per the UC Natural Reserve System (UCNRS) mission are complimentary and secondary purposes. The University recognizes that MVPGR has been conserved to provide compensatory mitigation for the impacts on threatened and endangered species from the development of the UC Merced campus and the associated University Community North, and that the protection and enhancement of the conservation values of these lands is the University's primary goal for these lands. The University has affirmatively stated that it will not authorize the use of these lands if the proposed use has the potential to adversely affect the conservation values. As such, the University currently excludes recreational use of the MVPGR.

1.2 OVERVIEW OF THE USE REQUEST EVALUATION PROCESS

Access to MVPGR is fully controlled by the University. All potential users of the MVPGR are required to obtain approval from the University to access the lands. The authority to approve/deny access for the proposed use lies with the UC Merced Natural Reserve System (UCM NRS) in consultation with the UC Merced Physical and Environmental Planning Department (UCM PEPD) who ensures regulatory compliance.

All potential users first submit an access request to the UCM NRS for initial review. The UCM NRS determines whether an access request conforms to the UCNRS mission and is an allowable research or education use type, and then consults with UCM PEPD staff as necessary during the full evaluation process to determine whether the access request should be approved, denied, or conditioned. At the time of evaluation, the UCM NRS and UCM PEPD also determine any necessary conditions and specialized monitoring needs. Once an application has been approved, users then make reservations for individual trips to carry out the activities; such reservation requests are evaluated by the UCM NRS in consultation with UCM PEPD as needed to ensure compliance with the approved application and any conditions.

UCM NRS and UCM PEPD also provide a summary of the research and educational uses planned for the upcoming month to the California Department of Fish and Wildlife (CDFW), the prospective easement holder for the MVPGR (see Section 1.4.2), for input in advance of the implementation of the proposed uses. Following input from UCM PEPD and CDFW, the UCM NRS is responsible for oversight of approved applications, including ensuring that all approval conditions are met. The UCM NRS also conveys actual monthly and annual use statistics to UCM PEPD and CDFW and assists UCM PEPD with information needs related to environmental permit reporting.

1.3 USE REQUEST EVALUATION PROCESS

The MVPGR is open on a limited basis to researchers and educators by application and reservation via the UCNRS Reserve Application Management System (RAMS) website (http://rams.ucnrs.org/). RAMS relies on a two-step process. First the user must (1) submit an application which describes the nature and location(s) of the proposed activities, then once approved (2) make a reservation that describes the proposed use and activities on a given day. Activities are carried out per the approved application, and evaluated regularly for compliance and updates, and modified as necessary.

1.3.1 Use Applications

In order to evaluate the use request on the MVPGR, RAMS applications must include the following information:

- All users and their affiliations;
- Purpose of proposed use;
- Timing, duration and frequency of visit(s);
- General geographic area in which the work will be performed;
- Size of area to be utilized;
- List of equipment to be used (if any);
- Method of transportation – foot, vehicle (personal or reserve gator use), bike;
- Description of potential impacts to plant or animal species or associated habitat;
- Description of any proposed ground-disturbing activities, including placing stakes, soil boring, soil collection, seedbed modification, etc. Methods and quantities must be specified;
- If collection of any specimens is requested, a description of objects or organisms to be collected, method for collection, and details of any proposed take; and
- Proof of any permits required, if applicable (e.g., CDFW Scientific Collecting Permit [SCP], United States Fish and Wildlife Service [USFWS] recovery permit, Institutional Animal Care and Use Committee [IACUC] permit).

In the case of research use in particular, prospective users are strongly encouraged to consult with the UCM NRS during the initial development phase of their research proposals, prior to submittal of a RAMS application.

Once an application is submitted in RAMS, the UCM NRS reviews the application and contacts the proposed user to discuss the proposed objectives and methods in more detail and convey the criteria and requirements of the allowable activities. Once the proposed use is understood and the user has modified (if necessary) their proposed activities, the application is evaluated. Primary evaluation is completed by the UCM NRS, with consultation with other campus experts (e.g., UCM PEPD) or stakeholders (e.g., USFWS, CDFW, and the conservation easement holder) as necessary according to established criteria. This process may lead to further modification of the proposed activities, which is subsequently altered and documented in RAMS. The application is also reviewed for compliance with conservation easement conditions and the federal and State laws and permits that are applicable to the MVPGR.

1.3.2 Reservation Requests

Once an application is approved, individual reservations are made to carry out the proposed work. At this stage, users also indicate the specific Research and Educational Use (REU) zones they will visit (**Figure A-1**). Review of reservations is typically focused on ensuring proposed activities conform to the work described in the application, the personnel involved in the work are appropriate (i.e., led by an approved project lead), and evaluating any potential for conflict among different groups on the MVPGR at the same time.

1.3.3 Post-Approval Evaluation

For applications that carry out activities across multiple years, starting in 2021-2022 the Reserve has implemented a process of re-evaluation at the start of each project year. The purpose of this re-evaluation is to: 1) check-in with the user to determine that their project is still active, the approved work described in their application remains unchanged, and the list of project leads is still appropriate; 2) evaluate compliance with approval conditions, and any potential conflict with changes to campus-level, State, or federal regulatory requirements; and 3) re-iterate the policies and procedures governing access to the MVPGR.

If a user fails to comply with any of the requirements associated with their work on the MVPGR, the UCM NRS, after proper consultation with UCM PEPD and other appropriate stakeholders (such as USFWS, CDFW, and the conservation easement holder), may restrict or terminate on-going use, and the user's subsequent use applications may be rejected.

1.3.4 Use Policies and Rules

Use of the MVPGR is at the discretion of the UC Merced administration. Use may be denied, revoked, or cancelled at any time as conditions change.

For all activities that are approved on the MVPGR, the UCM NRS communicates with users to provide information on site characteristics and access conditions and requirements, as appropriate. Additionally, all users must agree to the guidelines of entry. The general access guidelines are located on the Merced Vernal Pools and Grassland website (https://vernalpools.ucmerced.edu/access/access-guidelines-and-application-information), which includes waiver forms, safety information, requirements to minimize the spread of invasive plant species on the MVPGR, equipment decontamination requirements for research activities within aquatic features, staying on designated roads, and guidelines for leaving any cultural resources undisturbed. All guidelines, access conditions, and/or special requirements are clearly communicated by the UCM NRS in an email that approves the application and/or reservation. The UCM NRS may also require users to meet with UC Merced management staff prior to coming on site – e.g., in cases of the first visit to the MVPGR by any researcher, or to UC Merced educational trip leads prior to their first visit. In accordance with the requirements set forth in the *2008 Management Plan for Conservation Lands and the Adjacent Campus Buildout Lands for the University of California, Merced*[1] (*2008 Management Plan*), all non-UC led educational activities are accompanied by UCM NRS staff or an approved UC delegate. Refer to Sections 1.4.2 and 1.5 below for more information on the *2008 Management Plan* policies that are applicable to research and educational uses on the MVPGR.

[1] Airola Environmental Consulting. 2008. Management Plan for Conservation Lands and the Adjacent Campus Buildout Lands for the University of California, Merced. September.

1.4 EVALUATION CRITERIA FOR ALLOWABLE ACTIVITIES

For each use application, UCM NRS and UCM PEPD staff as necessary, determine if the use is compatible with the (a) UC environmental commitments with respect to the MVPGR and other applicable laws and regulations, and (b) UC NRS mission and policies.

1.4.1 Compliance with UCNRS Mission and Policy

Per Chapter 18 of the NRS Administrative Handbook, the UCM NRS uses the following evaluation criteria for all use applications. These are in alignment with the *2008 Management Plan* guidelines for research and educational activities on the MVPGR.

- **Allowable activity and conformance to NRS mission** - All MVPGR use applications must fit into one of the categories for allowable activities: research, university/college level education, or public educational activity. If a user's request does not fit into one of the three categories, the application is denied.
- **Impacts on natural systems** - potential positive and negative impacts on natural systems.
- **Impacts on present or long-term use** - potential positive and negative impacts on reserve use.
- **Laws and policies** - compliance with applicable state and federal laws and permits, and reserve guidelines.
- **Alternative sites** - availability and proximity of alternative sites.
- **Safety** - ability of researcher or educator to conduct research or education in a safe manner.
- **Academic credentials** (*research and education only*) - Researcher's or educator's academic credentials and affiliation to institution of higher education or governmental agency or research institute. UC researchers and educators will generally be given priority, but every effort will be made to accommodate other users.
- **Publication and reports** (*research and education only*)
- **Feasibility** (*research only*) - feasibility and scientific merit of proposed research project.
- **Funding** (*research only*) - certification of grant approval by the applicant's funding source.
- **Data** (*research only*) - All researchers are expected to provide the UC NRS with datasets and metadata descriptions derived from their work on the reserve and a research results summary.

1.4.2 Compliance with Laws, Regulations and Environmental Commitments

All research and education use on the MVPGR must comply with all applicable laws, regulations, and UC's environmental permits and commitments. The UCM NRS collaborates with UCM PEPD staff to determine if a use is allowable per the UC's mitigation obligations, as described below.

Conservation Easement Compliance

There are currently two conservation easements on the property[2] covering approximately 5,125 acres. The University is working with CDFW to transfer these easements to CDFW and then place a single conservation easement on the entirety of the MVPGR, to be held by CDFW. The easement will protect the land in perpetuity from development and permit the limited allowable use of the property for "…. scientific,

[2] Virginia Smith Trust and Myers Easterly properties

educational and other activities that work in harmony with the protection and preservation of Conservation Values." Any allowable research or educational uses must also maintain the conservation values of the land, as described in the *2008 Management Plan*. The current UCM NRS and UCM PEPD evaluation process for research and education activities is in alignment with the existing conservation easements, and will be modified, as necessary, based on the pending conservation easement that will be held by CDFW.

No permanent infrastructure, outside of what is described in the Grazing Management Plan included in the *2008 Management Plan*, is allowed on the MVPGR.

Federal and State Endangered Species Act Compliance

The MVPGR lands are part of the mitigation program for the UC Merced Campus and University Community North. Typically, no large-scale manipulation of the ground is allowed and has not been authorized to date, although research projects that benefit the long-term survival or recovery of a species such as restoration projects may be allowed. Minor ground disturbing activities, such as installation of piezometers and soil moisture sensors, soil boring or soil collection, may be allowed following review by UCM NRS and UCM PEPD and input from CDFW. Use that causes ground disturbance may have special conditions to follow upon application approval. In alignment with the overall UC NRS evaluation guidelines, federal and State regulations, and conservation easement requirements, any use on the MVPGR lands that has the potential to result in the take of a listed species, reduces habitat quality, or causes the permanent or long-term change in the natural environment (e.g., long-term reduction in population numbers of threatened and endangered species) will not be considered an allowable use unless explicit written permission is granted from USFWS and CDFW and the easement holder. For use requests that may need additional permissions, UCM PEPD is responsible for coordinating with the researcher and/or UCM NRS to determine the appropriate process for corresponding with USFWS and CDFW for written permission.

Take of special-status species will be limited. UC Merced tracks all State and federal threatened and endangered species on the MVPGR in order to gain a general idea of population size. Any research that has the potential to involve the direct take or harm of special-status species is carefully evaluated by the UCM NRS in consultation with UCM PEPD, and CDFW and USFWS as necessary. Additionally, researchers are required to provide proof of Incidental Take Permit (ITP), SCP, and/or and recovery permit to take any listed species. Even with the necessary permits, a researcher's proposed use may still not be approved if the University, with input from the USFWS, CDFW, and conservation easement holder, determines the project would negatively impact a species to a degree it could not recover from quickly.

Management Plan Compliance

Management commitments necessary to protect and maintain the conservation values of the MVPGR are outlined in the *2008 Management Plan* that serves as a binding agreement between UC Merced and the regulatory agencies that issued permits for campus development. Section 5.5, Research and Educational Uses Program, of the *2008 Management Plan*[3] provides the general guidance to allow scientific research and educational uses that are compatible and do not compromise the conservation and mitigation objectives for these lands. All proposed research and educational uses of the MVPGR are subject to the land management and protection requirements outlined in the *2008 Management Plan*, as further described below. As the prospective conservation easement holder, CDFW is currently reviewing the *2008 Management Plan* and the current protocols for research and educational uses. All research and

[3] While the *2008 Management Plan* currently allows recreational and other public uses on the MVPGR and the existing VST conservation easement permits limited uses of this type, the University currently excludes and has no plans to allow recreational and non-educational public use of the MVPGR. As such, no access protocols related to recreational or non-educational public uses are included in this appendix.

educational uses on the MVPGR and the associated review and implementation protocols for these uses would adhere to any plan revisions based on CDFW's review.

Other Applicable Commitments

UCM PEPD is responsible for determining compliance with other laws and regulations such as the Migratory Bird Treaty Act, and the National Historic Preservation Act (NHPA) and Native American Graves Protection and Repatriation Act (NAGPRA), both of which govern cultural resources, etc. Any approved users that work with threatened and endangered species must follow all applicable laws and include proof of current and valid State scientific collection permits, as described above. All users also need to comply with any necessary IACUC, drone, or other UC policies that may govern their research. Users identify which laws and regulations may apply to their work through the series of questions they are asked in their application, and other potential issues are flagged by the UCM NRS based on locations and types of activities. If a potential issue is flagged, the UCM NRS consults with UCM PEPD to determine compliance, and input from the USFWS, CDFW, and/or conservation easement holder is sought as needed.

1.5 RESERVE SPECIFIC GUIDANCE

1.5.1 Reserve-Specific Access Guidelines for Research Use

In addition to the evaluation guidance presented above, the UCM NRS, in consultation as needed with UCM PEPD, evaluate research use applications using guidelines in the *2008 Management Plan* (Guidelines REU-1 and REU-3 through REU-5 in Chapter 5).

Appropriate Research Activities

Approved research activities must satisfy the following conditions.

- Meet rigorous scientific standards;
- May address an array of issues, but preference is given to studies that involve listed species, their habitats, and underlying processes, and thereby contribute to species conservation and/or recovery;
- Not conflict with the *2008 Management Plan* and avoid or minimize incidental take as required in the UC Merced Biological Opinion and Incidental Take Permit (ITP);
- Ensure that research-required take of listed species occurs under appropriate research permits from state and federal agencies;
- Do not introduce non-native species;
- May include placement of measuring and sampling devices and enclosures or exclosures to study grazing effects, implement study design, and protect equipment as needed; and
- Acknowledgement of the University of California and MVPGR in any publications or reports that result from research or other work conducted on the MVPGR.

Research Site Locations

The *2008 Management Plan* directs that research should be conducted on land areas where it will have the least effect on conservation resources while meeting research objectives. In order from least to most sensitive, these lands are: MVPGR lands outside of the watershed occupied by Conservancy Fairy Shrimp, and MVPGR lands within the watershed of the Conservancy Fairy Shrimp (REU-2). The MVPGR lands have been categorized into different Research and Education Use (REU) Zones (**Figure A-1**) in order to better track cumulative use across the landscape. This scheme lays the groundwork for potentially implementing

adaptive use capacities as needed across the MVPGR lands. For proposed activities on the MVPGR, the REU Zones combined with triggers for consultation with UCM PEPD in sensitive zones help guide location of activities, and allowable research is sited where it is deemed to have the least effect on conservation resources while meeting research objectives. UCM PEPD and UCM NRS staff collaborate to maintain a continuously updated map showing known locations of special-status plants and animals and cultural resources, which help the UCM NRS and UCM PEPD staff direct research away from sensitive areas whenever feasible, unless the research is specific to the conservation and/or recovery of a special-status species. The UCM NRS also evaluates research locations in relation to the REU Zones to ensure that research projects do not become overly concentrated in any one area, causing cumulative effects.

Requirements for Reducing Effects of Ground Disturbance

The extent of ground disturbance varies based on the type of activities being conducted. Minor ground disturbing activities typically include installation of piezometers and soil moisture sensors, limited soil boring or soil collection (as described in the 'Federal and State Endangered Species Act Compliance' section above), or other minimal disturbances that do not occur within wetlands/vernal pools, small mammal burrows, or other sensitive environments. Research activities that result in more substantial ground disturbance may be subject to Management Guideline HE-1, which requires conducting pre-disturbance surveys for presence of listed species, avoiding listed species and wetlands, stockpiling topsoil, and implementing erosion control measures.

Availability of Research Results

Researchers must share the results of their findings with the UCM NRS and permitting agencies (USFWS, CDFW, USACE) as information to inform future management of MVPGR resources, subject to the researchers' rights to use their proprietary data, as required in the USFWS Biological Opinion for UC Merced. Terms for sharing research results are included in research authorizations.

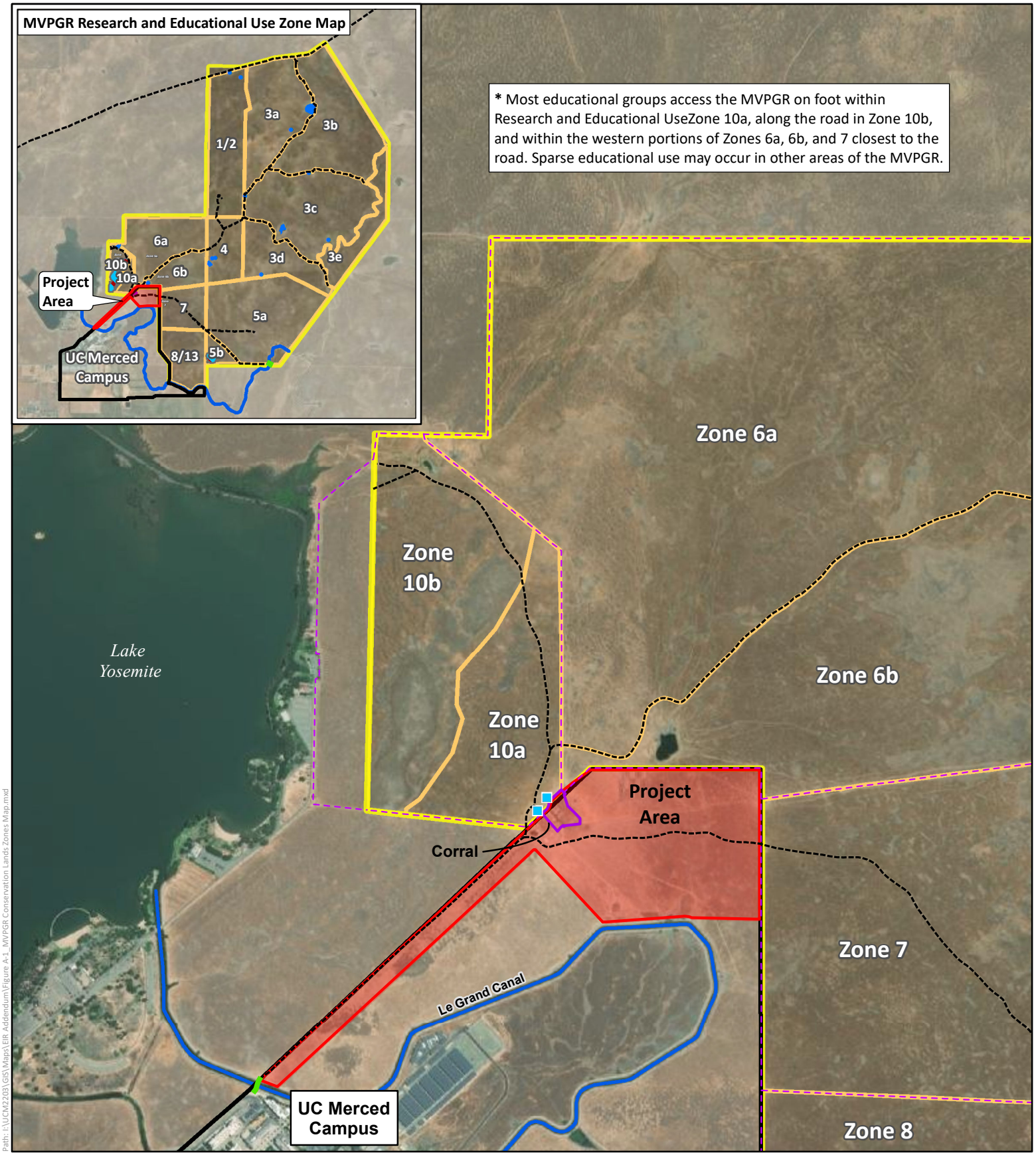
1.5.2 Reserve-Specific Access Guidelines for Educational Use

The *2008 Management Plan* allows for the MVPGR to be utilized for educational uses. Educational use of the MVPGR is available, subject to use conditions, when the unique resources of the Reserve are reasonably necessary for the educational objectives. Primary educational use is by university-level classes, and classes must be offered for credit by state or nationally accredited colleges or universities. Instructors must complete a RAMS application, discuss the use proposal with the UCM NRS, and agree to comply with the requirements of the *2008 Management Plan*. The instructor must specify the purpose of use, timing, size of group, use locations, and potential effects on plant and animal populations, and (if needed) an approved animal care use protocol and applicable permits. Use of MVPGR lands by primary and secondary schools, community groups, and qualified non-profit organizations is also educational in its focus and permitted under appropriate conditions.

The UCM NRS, in consultation as necessary with UCM PEPD, evaluate proposed educational uses based on:

- Impacts on natural systems, including significant habitat alterations, introductions of species or genes;
- Impacts on present or future use for research or instructional purposes;
- Compliance with applicable state and federal laws and UC Merced permit requirements;
- Academic credentials of instructor or the credentials of the community group/non-profit organization; and
- Availability and proximity of alternative sites.

Educational use is addressed in Guidelines REU-6 through REU-9 in Section 5.5 of the *2008 Management Plan*. **Figure A-1**, which shows and describes the REU Zones, is used to direct educational uses to the appropriate portions of the MVPGR so that impacts on sensitive resources from these uses are avoided or minimized. Non-UC Merced groups are required to be accompanied by UCM NRS staff or their trained UC delegate.



Path: I:\UCM\2203\GIS\Maps\EIR Addendum\Figure A-1_MVPGR Conservation Lands Zones Map.mxd

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MILES

0 500 1000
FEET

Field Education Center / Field Research Station
Merced Vernal Pools and Grassland Reserve (MVPGR)
Research and Educational Use (REU) Zone
Corral

Fence
Dirt Road
Bridge
Canal
Trough

FIGURE A-1

Primary Educational Use Areas and MVPGR REU Zone Map

Basemap Source: Esri World Imagery (2021)

Date: 1/12/2023